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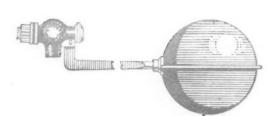
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### MARGINALIA

#### Seagram Building, New York

The recent publication of the architects' model of the new Seagram Building designed for a site on Park Avenue, New York, 1, has revealed a building which, if hardly surprising as a product of the partnership of Mies van der Rohe and Philip Johnson, will certainly be the most distinguished of New York's 'miniature' skyscrapers so far built or projected. The treatment of the structure and cladding of this 38-storey tower immediately recalls the treatment evolved for the Lake-Shore apartments, Chicago, but the bays are wider between main stanchions-seven mullions as against five, the exposed metal surfaces are, apparently, to be bronzed, and the glass is to be tinted, but not necessarily in the customary blue-green employed in glazed-all-over envelopes.

Behind this notable design of a notable partnership lies a curious architectural history, which may provide a clue to the kind of mechanism by which changes in American commercial taste are effected. The design was originally entrusted, in an impersonal manner and through routine channels, to Pereira and Luckman. Their project, remarkable chiefly for its complete absence of any sense of scale, 2, was badly received by the press, but a Seagram official said that, although a definite contract had not then been signed 'Charlie Luckman will always be in the picture,' however much the design might be altered, however many other architects were called in.

At this point the story spills out of routine channels and becomes a drama of personalities. The Pereira-Luckman project was seen in the Paris edition of the *Herald Tribune* by Mrs. Phyllis Lambert, daughter of Samuel Bronfman, the head of the vast Seagram combine, and was as badly received by her (she is a painter and art-collector) as it had been by American architectural journals. She returned

at once to America and entered actively into the workings of the Seagram organization's building committee. Largely through her influence the project was withdrawn from Pereira and Luckman, and offered to Mies, who co-opted Philip Johnson as his New York partner, with Kahn and Jacobs as associates.

#### Subtopia as Others See Us

In the past, satirists of their native lands have been in the habit of inventing intelligent foreign visitors whose reports, disguised as Lettres Persanes or news-flashes beamed from Mars, have carried the burden of the satirists' attacks. But the opponent of Subtopian sprawl (AR, June, 1955) has no need to invent any intelligent foreigner—he appears to exist already, for Max Werner, of Zurich, writing in the March issue of the Swiss



magazine Plan, illustrated his remarks on English housing with this sketch, which seems to show admirable diagnostic ability in face of the sickness in Subtopia's hollow heart. His caption speaks of this scene as typical of ribbon development along arterial highways, and comments that it throws dwelling and industry together without having any 'care for their disposition on the grand scale.' He has thus observed that indiscriminate superimposition of different patterns of land-usage which is one of the foundations of Subtopian sameness, but the sketch itself makes it clear that he has also observed the empty acres of nothing-inparticular, except an ill-placed amenityin this case a telephone box, and thus the responsibility of a Government authorityand the skyline jagged with ill-considered lamp-standards—the responsibility of a local authority-as well as the fake rurality of the endless semi-dets and their coy front gardensthe responsibility of the public in general.



Models for the new Seagram Building New York, by (1) Mies van der Rohe and Philip Johnson and (2) Luckman and Pereira.

#### Decoration of Pavements

People who like cobbled, or similarly textured and patterned, outdoor floor surfaces usually see them through eyes dimmed by an obsession for quaintness. They fail to see that their pleasure derives not from a vaguely sentimental, but from a specifically visual source; which may explain why a country with a tradition of such things can be engulfed in a tide of asphalt with so little protest. Varied floor surfaces are associated with the past and a consequent fatalism stifles dissatisfaction with the present. Not so in the Portuguese-speaking countries where they still indulge the pleasure of laying decorative pavements outdoors and for everyday use.



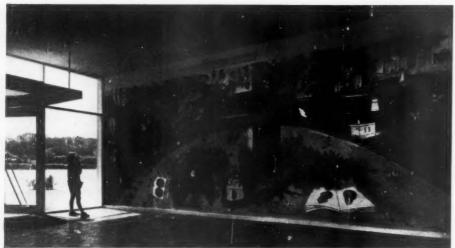
This photograph from a recent book of travel by Oswell Blakeston\* shows a pavement in Lisbon. It strives at no effect other than that of quietly gratifying the mind and the senses. The continuous classical motif is ideal for the purpose; it impresses without detaining.

\* Portuguese Panorama, Burke, 18s.

#### Progress on the South Bank

London's most promising piece of comprehensive development, which should serve as a model to those responsible for rebuilding the City, continues to be the LCC scheme for the South Bank. The situation report for May, 1955, gives a good idea of the kind of adjustments and give-and-take which are required to bring such a plan to fruition. Work on the re-alignment of the area's internal roads, the essential foundation to all comprehensive redevelopments is already in hand, and the plans of both the LCC and the largest private body involved, Shell Petroleum Company, both envisage extensive underground parking spaces, another essential in any central area development. The proposed air-terminal will not now be built, and the space rendered vacant by the demolition of the present terminal building (itself a legacy from the Festival of Britain) will be used to provide underground parking space for Shell, with a public open space above.

The Shell building, which will be the site's main feature, is now to be approximately 330 feet high, a bold skyward gesture which again might serve as an example to City authorities. However, one notes that this vertical feature gained is to be balanced by a

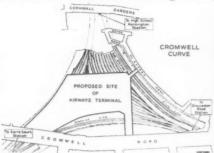


SCHOOL MURAL: The mural, above, in the entrance hall of the new Royston Garden waw school (architects Richard Sheppard and Partners) was painted by the architect in charge, Stephen Gardiner. The theme, as stated by the artist, is concerned with the contrast between Man's dominion over the elements, as humorously represented by the gay balloons, the paddle-steamer and the antiquated railway, with his Mortaltite—vide the skulls. Nature, however, is seen actively holding her own, not only in the long run, but at the present, with the peacock and the burgeoning tree, and the whale spouting in the distance. The colours are limited to those of the walls and ceilings nearby: dark green, lime green, prussian blue, red, pink and white. The dimensions are 24 feet by 10 feet.

vertical feature lost, for the report states, in passing, that the Shot Tower is to be demolished. Historically this is to be regretted, even if, topographically, it would have been rendered ineffective by the great height of the Shell Building, Always a well-known landmark on London River, it had become almost the only surviving link with the South Bank's pre-Festival past, and one hopes that the LCC can show better cause for its abolition than appears in the Report.

#### The Cromwell Curve

London Transport, acting as agents for BEA, are planning to erect a reinforced concrete deck at street level over more than half of the area known as the Cromwell Curve, i.e., the triangle formed by the convergence of the District and Circle Lines between Gloucester Road, Earls Court and High Street,



Kensington, stations, for the accommodation of a new airways terminal. The deck will be carried on steel framing and columns at about 21 feet above rail level. Completion of the whole scheme is scheduled for the middle of 1958; but the first stage, permitting the erection of light temporary buildings, should be ready in the Spring of 1957.

#### Italian Design in London

The opportunity to make a close study of Italian industrial design is normally a privilege of visitors to the *Triennale* or the

Fiera Campionaria in Milan. During the month of July, however, a selection of star examples of the new movement in Italian design is on view at the Italian Institute, Belgrave Square, thus enabling many architeets and designers to see, in the round, famous products from the houses of Necchi and Arteluce-to name only two-which they have hitherto known only as illustrations in Domus. Exhibits cover a wide range, from motorcycles to Murano glass and fishermen's jackets, and include the work of well-known designers like Marcello Nizzoli and relative new-comers to the field like Giovanni Dova, the painter. The rise of the concept of industrial design in Italy has come about almost entirely under Anglo-Saxon influence, and the exhibition thus represents an act of cultural reciprocity of particular interest to England.

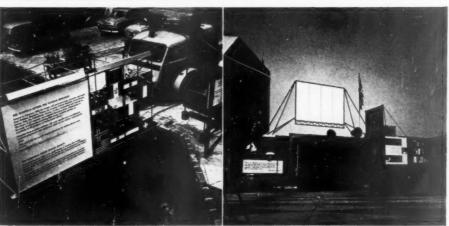
#### INTELLIGENCE

Marcus Whiffen, who was the AR's literary editor until 1952, when he went to America, has been appointed Architectural Historian to Colonial Williamsburg, a post involving the writing of works on colonial architecture in Virginia.

The Fitzwilliam Museum has recently opened a new gallery for the exhibition and storage of water-colours and drawings, named after W. Graham. Robertson, who bequeathed to the Museum a large sum of money and several works by Blake from his collection.

#### ACKNOWLEDGMENTS

Marginalia, page 1: 2, Architectural Forum; page 2: top, Stephen Gardiner; bottom, R. Browning. Airports, pages 9-10: F. Engesser, Zurich; page 11: Scotnews Ltd., Glasgow; page 12: Alfred de Lardi, Washington; pages 13-15: Dell & Wainwright and Toomey, Arphot; page 16: Jaap d'Oliveira, Amsterdam. PALLADIAN VILLAS, pages 17-20; Georgina Masson, Schools by Architects' Co-Partnership, pages 21-29; Galwey, Arphot. The Lost Axis, page 30: Aerofilms Ltd.; page 32: Cullen, Arphot. LUBETKIN, pages 39, 43 and 44: Dell & Wainwright; page 42: 5, Herbert Felton; 6, Dell & Wainwright; 7, J. Maltby. Current Architecture, pages 45-46: Toomey, Arphot; page 47: 5, 6, Public Relations Associates Ltd.; 7, J. R. Pantlin; page 48: 8, 9, A. F. Watson; 10, J. R. Pantlin. MISCELLANY, page 51: Oscar Savio, Rome; Man, Machine and Motion, page 52: 1, 2, 3, Science Museum; 5, Autocourse; 6, Colliers; 4, Histoire de la Locomotion Terrestre. Page 53: Roads, 1, Toomey, Arphot; 2, French Government Tourist Office; 3, Herbert Felton; 4, 5, British Road Federation Ltd.; page 54: 1, Dell & Wainwright; 2, London News Agency Photos Ltd.; 3, A. V. Swaebe. Skill, pages 55-56: Bar at Grosvenor House, Toomey, Arphot; page 57: Bar at Midland Hotel, Manchester, Stewart Bale Ltd., Liverpool; pages 58-59: Design Review, Italian furniture, Heal & Son Ltd.; French furniture, J. R. Pantlin.



ATOMS FOR PEACE: The first of the truckable, demountable exhibitions sponsored by USIS (European Service Centre) to be seen in England was Atoms for Peace, which—after circulating in Italy, Belgium and Holland—appeared on the South Bank in June, suitably Anglicized in collaboration with United Kingdom Atomic Energy Authority. Housed in five large articulated trucks whose trailer sections can be telescoped outwards laterally to provide almost square floor-plans, and are used to carry the outdoor exhibits when the caravan is on the move, Atoms for Peace was designed by USIS-ESC Presentations Branch, under Peter G. Harnden, working with an international team of designers.\* (For other mobile exhibits by USIS-ESC, see AR, April 1953.)

<sup>\*</sup>Chief designer, Bernard Pfriem; architects, Bombelli, Browning and Hadjopoulos; designers, Pierre Boucher, Strub and Ifert.

Norman Hartnell's Salon, London, W.1. Architect: Gerald Lacoste, A.R.I.B.A.



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# THE ARCHITECTURAL REVIEW



This month's cover is a photograph of the ARCHITECTURAL REVIEW's initial letters cut in stone. The carver, Ralph Beyer, has cut them in Gordon Cullen's version of lower-case Clarendon—the form in which these letters now normally appear on each month's cover. As will be observed the letters are quite without the dead rule-and-compass regularity which is normally regarded as proper to lapidary lettering, yet there is no loss of clarity, nor any sense of perversion of the letter-form—here indeed is a letter-form perfectly apt to stone, and thus to architectural usage, without subservience to the Trajanic tyranny of which Nicolete Gray spoke in the first of her articles on lettering (AR, November, 1953).

- 1 Marginalia
- 4 Frontispiece
- The essence of travel is drama, and the role of the architect is to heighten that drama. From this basic postulate can be developed a philosophy of the design of the whole equipment of travel, but in this essay Mr. Brett is concerned chiefly with the design of airport buildings. He considers first the drama of the docks and of the great nine-teenth century train-halls, and asks that the way in which they have come to assume their burden of human significance should be understood, and also the way in which architects have largely failed to contribute to that meaning. In spite of the architect's apparent willingness to bury himself in problems of circulation and processing, in spite of an apparent desire to make all airports look alike, Rome and Cairo, Zurich and Chicago still have an atmosphere which is unmistakably their own. Here is an enormous field of architectural adventure as yet hardly surveyed. Writers as different as Le Corbusier and Sir Hugh Casson have spoken for a specially un-assertive architecture for airports, leaving visual and psychological dominance to the aircraft themselves, but between such poetic visions and the practical business of building airports there remains a gap. And yet it is on the practical side that one of the chief means of enhancing the poetry of airports is to be found, for the incoming or outgoing passenger must, inevitably follow a route, from one processing department to another, and that route is for the architect to design and exploit—giving to it measured progress, contrast, surprise, point . . . and drama.

#### Airport Buildings

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Hugh Casson
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Number 703

July 1955

- 11 Renfrew Airport: Architects, Rowand Anderson, Kininmonth and Paul
- 12 Phitadelphia Airport: Architects, Carroll, Grisdale and Van Alen
- 13 London Airport: Architect, Frederick Gibberd; Assistant Architect, R. J. Double
- 16 Amsterdam Air Terminal: Architects, Joh. H. Groenwegen and H. Mieras
- 17 Palladian Villas as Rural Centres by Georgina Masson Before the word designated a country house, a 'villa' was a varial estate, and the renowned villas of the Venetian Terraferma were organized rural communities, productive farming enterprises, before Venetian humanism and Venetian architects began to alter their intention and their architectural form. A train of accidents. agricultural, architectural and historical has cured this fact, and we tend to think of Palladio's villas as pleasure-houses, rather than the administrative centres of thriving farms, modelled on the classical precepts of Vitruvius, Pliny, and Palladio's fourth-century name-sake Rutilius Palladius. In this article Miss Masson attempts to recreate the original functional basis of the Palladian Villas, as revealed in the clear and precise practices set out in Palladio's own writings, with their instructions on the location and orientation of granaries, barns, cellars, threshing-floors, staff housing, and porticoes for covered circulation and supervision of the labours of the seasons. In some of the surviving houses, this functional planning for an agricultural economy can still be traced in spite of subsequent alterations or dilapidations, and Miss Masson concludes with a survey of such houses, showing the close integration of seignorial relaxation with business-like cultivation.

Three Schools by the Architects' Co-Partnership

- 21 School at Chaddesden, Derbyshire
- 25 School at Sheffield, Yorkshire
- 27 School at Hatfield, Hertfordshire
- South Kensington conceals a University—
  concealed partly by the wide windy perspectives of the streets, and partly by the acceptance of stucco-palazzo idiom in the most uncollegiate buildings which house the various
  institutions which together add up to a
  University in fact, if not in law. Yet an
  airview would show that the institutional
  buildings are, in fact, laid out on the
  collegiate principle—it is their manner of
  presentation to the streets which conceals
  this fact. If the hypnotic insistence of the
  corridor-perspectives could be broken up,
  then the buildings could be appreciated threedimensionally, instead of as mere façades.
  The proposal to rebuild and extend the
  Imperial College of Science now provides an
  opportunity to re-establish a collegiate
  architecture, and to give full value to some
  of the remarkable buildings which already
  occupy the site, and Gordon Cullen illustrates
  with text and sketches some of the ways in
  which this might be done.

- 36 Lubetkin by R. Furneaux Jordan Among the body of more-or-less unique figures who make up the Modern Movement in English architecture, Lubetkin stands out as being more unique than most-unique, obviously, in being an outsider with a foreign background, unique in his special brand of radicalism, unique in his firm grounding in the great tradition of European (and particularly) French architecture, unique in his continuous interior dialogue between Classic and Baroque. He must be viewed against the double background of the whole movement of European architecture since the Renaissance and the Modern Movement in England since 1930. This Mr. Jordan sets out to do, tracing his personal history from a boyhood in Tiflis, through Warsaw, Vienna and Paris, to the point of collision with nascent English Modernism, out of which grew the Tecton partnership, the Penguin pool, and Highpoint One—a point at which English Modernism, through his agency, produced its first impact on the European scene, and drew forth from Le Corbusier approval of Highpoint as the first vertical garden city. The comparison with Le Corbusier is instructive: he battered upon the hard, but hollow shell of French Academi-cism, while Lubetkin, through the Tecton partnership, fought with the soft, but elastic, mush of English Philistinism. The instruments with which this battle was waged were the buildings which succeeded Highpoint One, and Mr. Jordan pursues the successive impacts they made upon English architecture in general, and upon the younger generation in particular, showing how n rising suspicion of Lubetkin's 'Formalism' isolated him more and more from the general body of English Functionalists-a formalism which might have had a triumphant vindica-tion in the New Town at Peterlee, but never came to that final consummation. But if it is a formalism, it is a formalism packed with architectural content, and thus assured of
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Skill

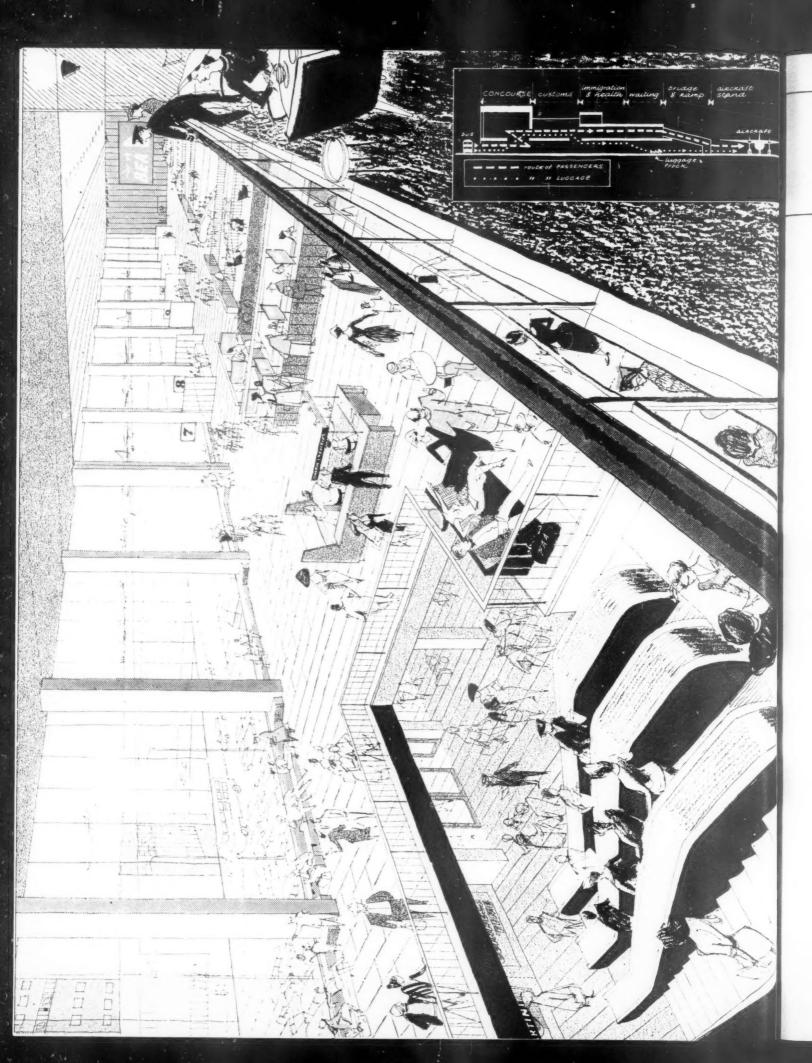
- 55 Bar at Grosvenor House: Designer, R. D. Russell
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#### THE ARCHITECTURAL REVIEW

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FIVE SHILLINGS



Rationalized techniques for 'processing' airline passengers and their luggage have produced a multi-level standard circulation pattern which is now almost universal, but is most clearly expressed in the new buildings designed by Frederick Gibberd for London Airport. Passengers ascend by escalator to a first-floor concourse (seen opposite in an impression by Kenneth Browne) from which they pass in parallel channels through Customs, Health and Immigration clearances to waiting rooms on the air-side of the building—their luggage being brought up to meet them in the Customs (see diagram, and also pp. 18-15), and then returning to ground level for transit to aircraft. Beyond the wide windows of the concourse can be seen the Control Tower and the airfield.

Lionel Brett

# ARRIVAL AND DEPARTURE

It was a journey of six-and-thirty hours. I had set out from Whiteross on a Tuesday afternoon, and early on the succeeding Thursday morning the coach stopped to water the horses at a wayside inn, situated in the midst of scenery whose green hedges and large fields and low pastoral hills (how mild of feature and verdant of hue compared with the stern North-Midland moors of Morton!) met my eye like the lineaments of a once familiar face. Yes, I knew the character of this landscape: I was sure we were near my bourne. 'How far is Thornfield Hall from here?' I asked of the ostler. 'Just two miles, ma'am, across the fields.' 'My journey is closed,' I thought to myself. I got out of the coach, gave a box I had into the ostler's charge, to be kept until I called for it; paid my fare; satisfied the coachman, and was going: the brightening day gleamed on the sign of the inn, and I read in gilt letters, 'The Rochester Arms.' My heart leapt up: I was already on my master's very lands. Charlotte Brontë: Jane Eure

For many years the bane of passenger handling—at least from the passengers' viewpoint—has been the fact that loading an airplane cannot be accomplished with protection from the elements. Extensible canvas awnings were used at a few airports with meager success. The ubiquitous umbrella almost lent a touch of comedy to the loading process as passenger and agent leaped among the puddles in a dash toward the cabin door. Recently a device has been developed with the intent of alleviating the loading problem; it is similar to the locomotive transfer table in general use in railroad repair shops. It consists of a pair of tracks each of which supports a dolly. The airplane taxis on to a dolly with each of its main tires, and is then brought toward the loading gate by means of electric-powered cables. Projecting from the terminal is a fixed two-story 'finger' with, at its outer end, a short ramp which can be adjusted to varying cabin sill heights.

In addition to permitting the loading of passengers or cargo to

In addition to permitting the loading of passengers or cargo to proceed on a level and under cover, use of this device permits a number of changes which should increase the efficiency of terminal operation.

Architectural Record, January 1951

Architects, eternal middlebrows, quite artistic, quite scientific, looking wistfully in both directions from their position of pure neutrality, must not be deluded on this issue. Ultimately, though they may speak knowingly of passengers being processed, they are on the side of the puddles and the two-mile walk from the Rochester Arms. They are on the side of life, and they must never do anything which makes life duller, more uniform or more undramatic.

For the essence of travel, symbol of our journey through life, is drama, and the role of the architect is to heighten the drama by the way he sets and shifts the scene.

Take, for instance, the silence as the stage-coach rattled off round the bend, taking her travelling-companions of the endless night away for ever. Jane Eyre stands absolutely alone in the golden morning sun, begins to hear larks singing, or an early ploughman calling to his horses. New life and love lie ahead across the dew-drenched fields, and this pause is their essence, their savour.

It can be the same, if we are allowed the moment, as the plane door bangs open at Cairo or Nice, and we stand regally on the top step in the astonishing heat and glare,

overdressed, blinded, our ears buzzing. If the architect as airport planner does not speak up for this moment, no one else will, and we shall find ourselves emplaning everywhere as one now has to embark at Southampton, via a totally enclosed gangway, just another corridor, this time from the hideous lounge of the Ocean Terminal to the hideous lounge of the Queen Mary—missing altogether the wind, the incredible height of the ship's side and the dangerous slit of filthy water miles below.

It was through ships, of course, that the drama of travel first struck the human race.

'And Telemachus called unto his company and bade them lay hands on the tackling, and they hearkened to his call. So they raised the mast of pine tree and set it in the hole of the cross plank, and made it fast with forestays, and hauled up the white sails with twisted ropes of oxhide. And the wind filled the belly of the sail, and the dark wave seethed round the stem of the running ship, and she fleeted over the wave, accomplishing her path. Then they made all fast in the swift black ship, and set mixing bowls brimmed with wine, and poured drink offering to the deathless gods that are from everlasting, and in chief to the grey-eyed daughter of Zeus. So all night long and through the dawn the ship cleft her way.'

We have exchanged this west wind, for which men listened in the night, for a new drama of size and silence. The enormity of liners and the way they sidle imperceptibly but ineluctably away from the dockside—these are the things we must be allowed to see and feel. Docks must be allowed their superhuman scale and palaeotechnic lack of protective barriers. We should not be debarred from getting lost among enormous chains, watched from the sky by a man in a gantry.

There seems indeed little reason to imagine that the passenger by ship can ever be entirely insulated from the splendours and miseries of this form of transport. Tides, winds and mountainous waves necessitate ruggedness and simplicity of design in everything that will have to reckon with them, so that no one has yet succeeded in re-styling all the character out of the outsides of ships. Clotted paint and gleaming brasswork, scrubbed teak and thick green glass cannot be dispensed with, however pretty the model in the Cockspur Street window, and ships must always tower surprisingly over puny dockside buildings, thrusting their prows over the shuttling traffic of the West Side Drive, or raising a bright red or yellow funnel high above the elms and pastures of Southampton Water. Nor will the lushest lounges seduce that little knot of waving spectators from the pier end, as the gap of water widens between them and those they can no longer speak to, and can hardly see.

But for the last hundred years, to the vast majority of human beings, the railway station has been background for the overwhelming moments of arrival and departure, symbol of escape, exile, reunion, gateway to adventure, start of the honeymoon, end of the holidays, leave from the trenches, desperate partings in the blackout. Nobody foresaw the vastly numinous quality of the great echoing vault, audible (particularly at night) as we enter it, however tightly sealed the wagon-lit or steamed-up the third-class window. In so far as architects had any hand in it, they were as charmingly off the beam as any airport planner of today.

'The styles of architecture which have been adopted in the construction of railway stations are very various.' . . . 'Sometimes they are heavy and massive, or large and handsome; in other places they are neat or picturesque; and occa-ionally they have no one good quality to apologise for their existence. The characteristics of the neighbourhood in which they are erected have in some instances appropriately determined the style.'2

One is reminded of the 'English' red brick of London Airport, or of the adobe airport at Albuquerque, New Mexico.

<sup>&</sup>lt;sup>1</sup> Odyssey, Book 2.

<sup>&</sup>lt;sup>a</sup> Quoted in 'A History of Cast Iron in Architecture', Gloag & Bridgwater, 1948.

Let us, however, keep on the rails a little longer, and ask ourselves whether the grandeur of the great railway stations is merely subjective, associational, or whether it can be accounted for and re-created. We are bound to answer 'both' and thus to delete the word 'merely' from the equation. We are thus led to an analysis of these subjective elements. We can, for instance, contrast the London station, with its low anterooms leading into the vast concourse full of steam and interweaving crowds and diffused noise, with the New York station, where the spatial process is reversed, and we pass from the street straight into a huge hushed hall, and thence dive to obscure tunnels where aluminium trains lie quiet and low between high raised platforms.

The point of all this is not merely nostalgic. It is a plea for architectural humanism. We have seen that Victorian architects, with their stylistic preoccupations, entirely missed the point. We may not even except Hardwick's great arch at Euston, which expressed a literary idea ('Gateway to the North') quite remote from the universal human experience I have tried to describe. The engineers, of course, set the actual awe-inspiring scene, but they were the unconscious agents of a vast technological movement, and presumably never gave a thought to its emotional effect on the individual passenger. The fact seems to be that these great monuments were as impersonal as a battleship, and it was the emotions of succeeding generations that filled them with ghosts. It would have needed a great Baroque genius of a type quite alien to the nineteenth century to imagine and embody these emotions.

One must add that we fail too, but in a curiously different way. For one thing, instead of too much Art, we have too much Science. To us, the passenger is a package on legs—or more accurately a weak swimmer in the strong current of a Circulation Diagram—accepted, inhaled, sucked into a backwater, ejected, swept on, tempted by well-sited impulse salesgirls, automatically sorted and counted by turnstiles, and finally disgorged into some kind of streamlined transport, of which all kinds look increasingly alike. For this is a second curiosity—the effect of contemporary styling as sedative, bromide, antidote to feeling. Apart from its obvious tendency to streamline functional differences and thus serve every dish in the same sauce, there seems to be something inherently murderous to emotion (except at Eagle level) in the borax style. How else account for our affection for Edwardian cars, early coast-to-coast expresses with their bells and cow-catchers, bamboo aircraft and balloons. Only the helicopter still has its primitive dragonfly charm; and that we must soon inevitably lose.

Which brings us back to the airport, in which our generation makes its own statement of technocracy, nationalism and anxiety. It is commonly said that all airports look alike, and indeed all travel erects an invisible wall between us and the world. Airports, docks, railway stations are equally cut off within the wall, in an unreality we only escape when we climb into waiting car or taxi. Yet how different, within their separate world, are Rome and Cairo—adjoining stations on the same route—the one chic, lively, always under repair, full of decorator's clichés, the other echoing and lonely, lately done up in Flemish Modernistic of the 1920's, which is perhaps the most depressing style in the world. Or compare chaste, empty Collinstown with cheerful, free-and-easy Prestwick, with its rain-washed hills. Or Zurich, perhaps the prettiest in the world, with Chicago, hideous, and as busy as a main-line railway terminus. Or a Middle-Western airport like Denver, brash and streamlined, with any of the new Indian stations, with their innocent cream stucco and exposed pipe-runs. This is a huge architectural

field, changing all the time before our eyes, yet only a few American specialists know much about it and the critics have hardly looked at it.

Le Corbusier, it is true, in a vivid postscript to his fourth volume, briefly illuminates the problem in his intuitive way.

'Une fois au sol, une seule architecture semble tolérable et parfaitement admissible: c'est celle des magnifiques avions qui vous ont amenés ou que vous allez prendre, et qui occupent devant vous l'espace visible. Leur biologie est telle, leur forme est une telle expression d'harmonie, qu'aucune architecture ne devient raisonnable à côté, ni aucun bâtiment supportable.

Un aéroport semblerait donc devoir être nu, entiérement à plein ciel, à pleine prairie, à pleines pistes de ciment.'3

And Sir Hugh Casson, writing about the monumental hangars of London Airport, makes the same claim for light and ephemeral airport buildings, visually subservient to (and thus tactfully emphasizing the size and stability of) the great airliners of the international routes. But between these imaginative writers and the technical men battling with the intricate and elaborate problems of airport terminal design, a not unfamiliar gulf is fixed. Without claiming to bridge this gulf, I propose to summarize here the principles that seem to emerge from our discussion.

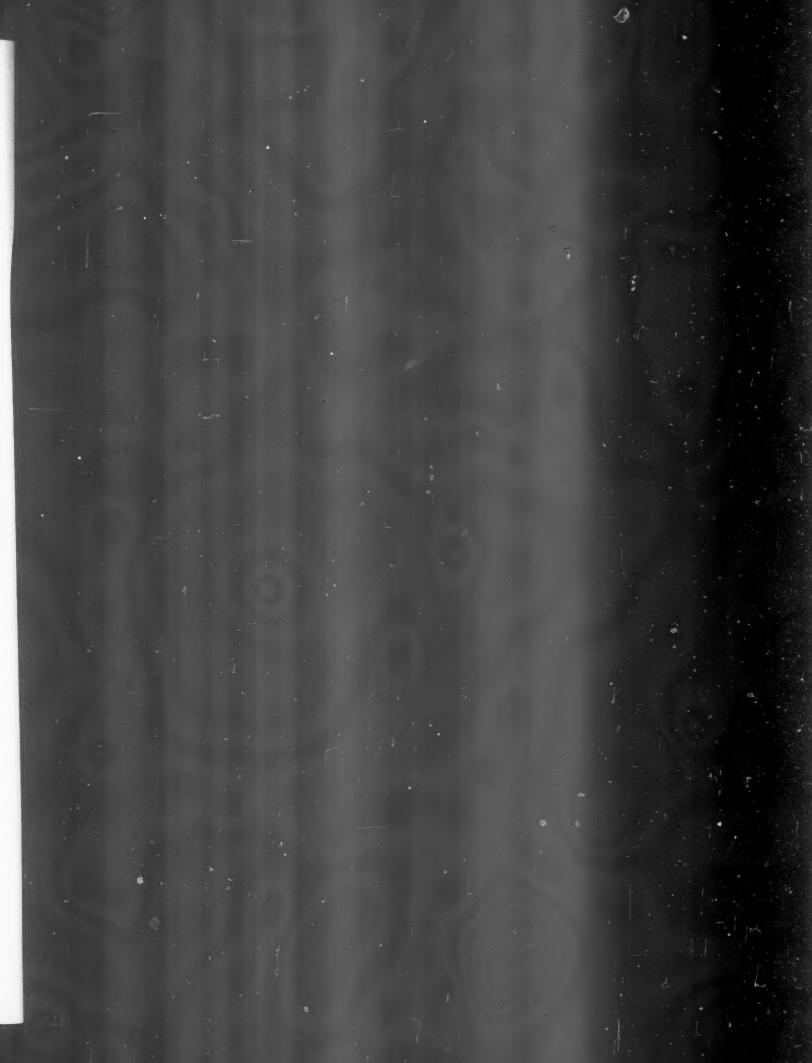
First, travel is drama, and you only muffle it by pretending aircraft are ships or ships are floating hotels. You deaden it by running its scenes together and not allowing the passenger the actual moment of crossing the windy tarmac or the steep gangway. You diminish it by applying a standard language of streamlining to shapes as miles apart functionally as a liner and an aeroplane. The aeroplane poised on the tarmac, urgent to start, ground crews busy on engines and tanks, is a fine sight to even the most jaded passenger, and he is entitled to it. So, of course, is the passer-by. The va-et-vien of a big airport must always be faster and more exciting than any railway station or port. It should not be walled off or thoughtlessly obstructed by a clutter of insignificant installations. Tail-fins rising above low temporary buildings are by pure chance as surprising as the masts of the sailing ships riding above the rooftops in an eighteenth-century print. It is a pity to hide all this behind pompous façades, allowing only the privileged their grand-stand view through the lounge windows.

The ship dominates its berth by size, the train by noise, the aircraft by shape. Therefore the air terminal should be long, low, earthbound, unassertive, with something of the elegance and flexibility of an English prefabricated school. It must be comfortable, for long grounded nights, thus sound-proofed and air-conditioned. And it can proclaim its region or nationality not by the use of 'local' building materials but by the little things—telephone booths, letter boxes, bookstalls, uniforms, food, manners—which first strike ordinary people abroad. (Who could possibly miss the Parisian atmosphere of Orly, or the Yankee atmosphere of Logan, though both are on the very edge of their cultures, and neither has any architectural affectations?)

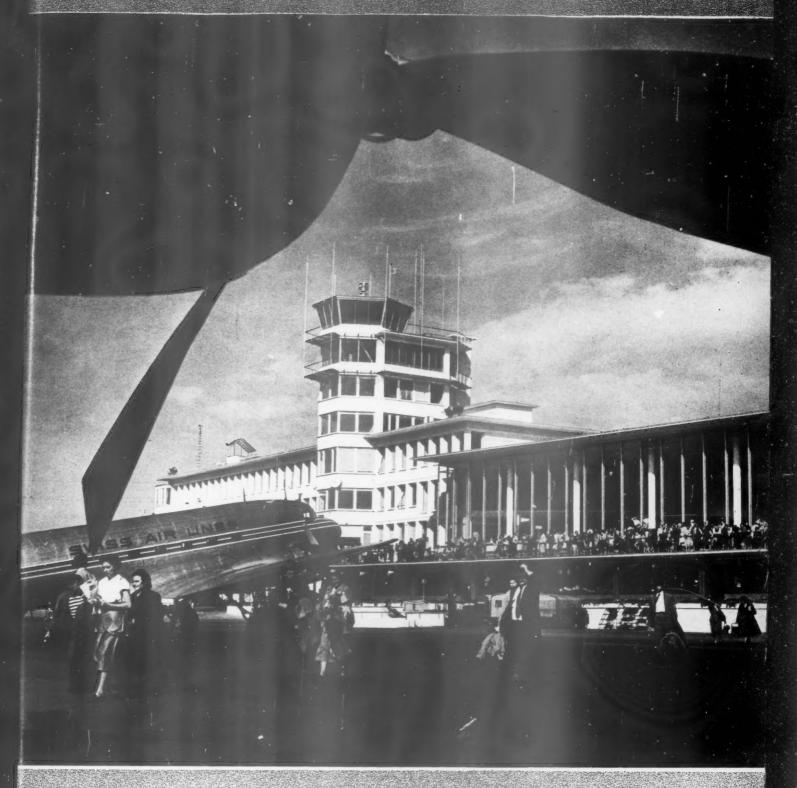
Finally, we should note one priceless asset of the air terminal designer. The people who use his building will be moving in a way he can control from one moment of climax (the touchdown of the plane) to another (the emergence into a new city or country), or vice versa—no ant-heap to be sheltered from the weather, but a measured progress to be given point, contrast and surprise: the Baroque dream, not the Gothic.

These are intangibles; but then criticism at best can do no more than remind the architect that while he can trust his client to insist on efficiency or prestige or commercial soundness, it will be for him alone to fight for the life-enhancing qualities of architecture.

<sup>&</sup>lt;sup>3</sup> Le Corbusier, Oeuvre Complête, 1938-46.







#### Zurich Airport

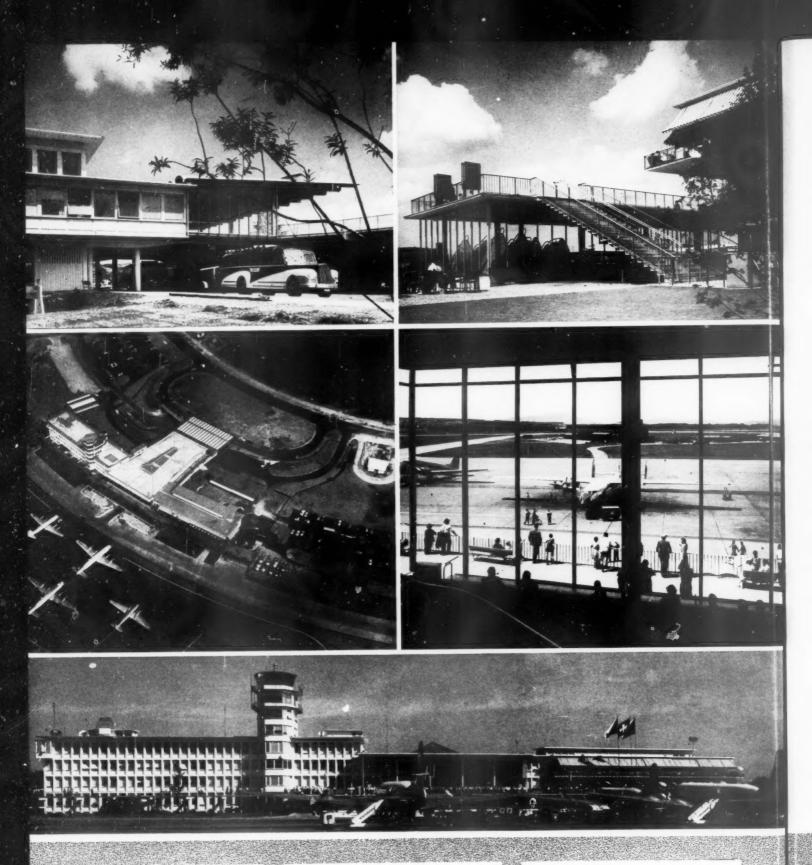
Architects: A. & H. Oeschger.

Unlike the great majority of airports, which are built in areas of flat and relatively featureless landscape, Zurich-Kloten—as might be expected in Switzerland—has had to be fitted into a terrain of hills, with low valley bottoms between them. The hills are not very high, but all the valley bottoms are occupied by runways, taxi-ways and other

areas of cleared land, and the airport building are therefore backed up against the most substantial of the hills ringing the site, within the V formed by two minor runways. The taxi-way serving these two runways, and the road which leads from the airport to the city, curve round the hill concentrically and the airport building and apron, occupying the strip of land between road and taxiway, curve with them. The main run of the building thus presents a long convex façade

to the ap:on on the air-side, but n large central member runs back (as at Renfrew) to the entrance canopy on the land-side, giving n loosely T-shaped plan.

This central member houses all passengerhandling facilities except the restaurant, and exploits the fall of the site from land-side to air-side to develop the kind of two-level circulation for passengers and luggage which is now becoming standard practice. Travellers enter at either level and meet their bags,



which come in at the lower level, in the customs hall at the lower level, from where processing brings them forward to the apron at the lower level only, where they join transit passengers (those changing planes) on the air-side of the customs barrier. The level above, from which they have descended, contains the main concourse, whose plan, widening toward the air-side, permits the creation of a vast viewing window overlooking the apron.

To the south of the passenger-handling block is a wing given over almost entirely to restaurants, serving both passengers and visitors, with long outside terraces at two floor levels so that diners enjoy an excellent view of the apron. The other wing, to the north, is for administrative and control offices, serving both the airport at large, and the particular companies which operate from it. The control tower rises four storeys clear above this block in order to give both air-

control and ground-control sufficient view over their respective zones of peration.

The structure of the buildings is mostly reinforced concrete, with mushroom construction for the lower levels. Two interesting techniques for overhead cover have been used-a glass and steel triangular grid carrying the ceiling of the main concourse, and a corrugated aluminium vaulting carried on steel supports, which forms the portecochère at the upper level en the land-side.







#### Renfrew Airport

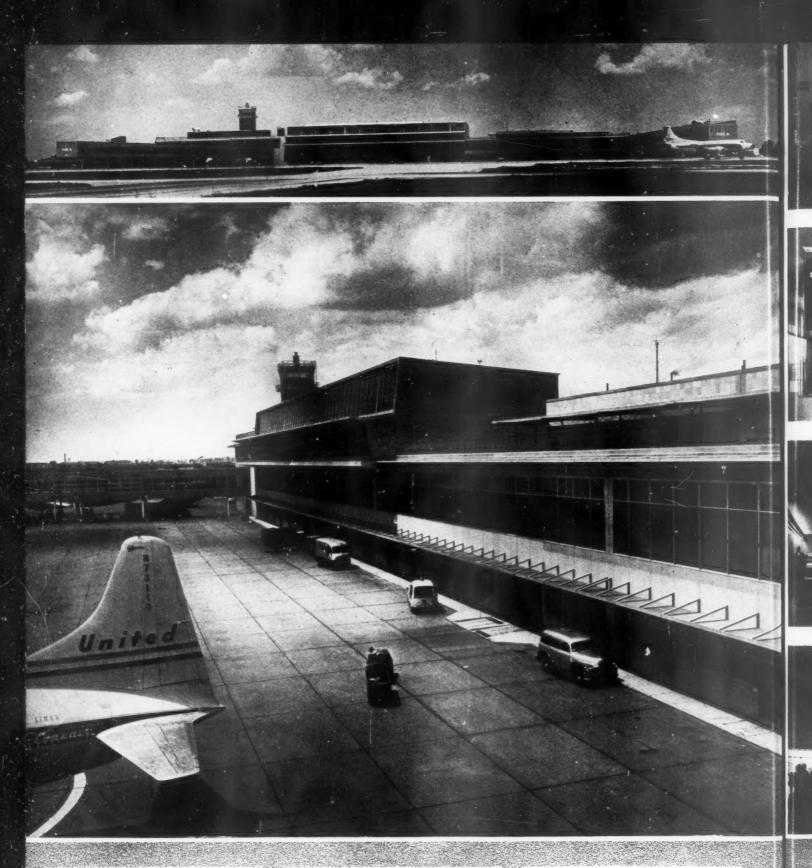
Architects: Rowand Anderson, Kininmonth and Paul.

Though a feeder airport, whose function is to connect Glasgow with the great international airlines, Renfrew has its own customs facilities and thus offers, in miniature, the services and problems of a major airport. Like Zurich, it presents a convex façade on the air-side with a passenger-handling block occupying the centre of the structure, and

running back to an entrance canopy on the land-side. But because of its smallness, however, there is no need for two-level circulation. This leaves the upper level on the air-side free for a restaurant and viewing-terrace overlooking the apron.

The structure of the lateral office wings is fairly conventional, but the central passenger-handling block is of interest. Reinforced concrete portal frames of an unusual form rise from ground level on the air-side,

wrap over the headroom of the viewing-restaurant and drop toward the entrance on the land-side. Due to the curvature of the plan, to which they are radii, they also converge toward the land-side, but instead of being grounded in the normal manner, their ends are gathered by a single concrete beam, hung on tension members from a parabolic concrete arch. This leaves the entrance wall free of structural members—it is entirely of double-glazing, as is the rest of the block.



#### Philadelphia Airport

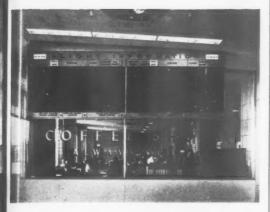
Architects: Garroll, Grisdale and Van Alen.

Originally conceived as a peripheral scheme, with each operating company housed in a separate building, the programme for Philadelphia International Air-Terminal was later modified to concentrate all companies within a single building, sharing most facilities, but not baggage handling. Following in local variant of the regular processing-

diagram, passengers take their bags up to the first floor where after ticketing and weighing they are dropped by chutes to the handling area below Travellers then remain at first-floor level, where there is a long waiting room on the air-side overlooking the apron, until due to emplane, when they pass along one or other of two projecting covered walkways at first-floor level which extend across the apron. Stairs lead down to the apron at intervals along these walk-ways.

International passengers, requiring customs clearance and other formalities, are handled on a different procedure at the western end of the block, but here again ticketing, weighing and customs processing are done at first-floor level, and travellers and their bags then descend separately to the international section of the apron. On the higher floors are a large two-deck restaurant with windows overlooking the apron, a public viewing-deck to which access is gained by a

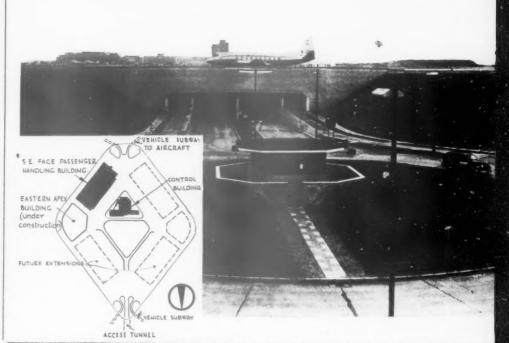












ramp, and weather and control offices.

The structure is almost entirely reinforced-concrete post and slab, with in situ cast portal frames carrying the windows and roof of the viewing-restaurant. Facing materials of the main block and of the entirely separate power-house are pink brick, aluminium and blue tiles. The two walk-ways are structurally independent of the main building and are framed in steel.

#### London Airport

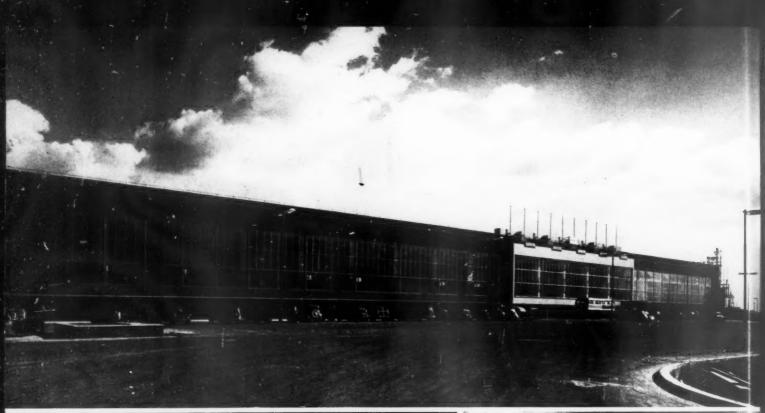
Architect: Frederick Gibberd; Assistant Architect: R. J. Double.

London Airport is unique among major European terminals in having its buildings centrally disposed. The airport site is roughly rectangular, and the runways form within it two interpenetrating equilateral friangles, thus leaving a dead-space of roughly hexagonal shape within which the main passenger-

handling and control buildings are being erected—access to the perimeter of the air-field being by way of a tunnel.

This central area has m large apron on its two easterly sides, and it is on these eastern faces of the hexagon that building has begun. The immediate programme calls for a control tower, m large passenger-handling building on the south-eastern face, and another on the eastern apex.

The control tower is a completely inde-







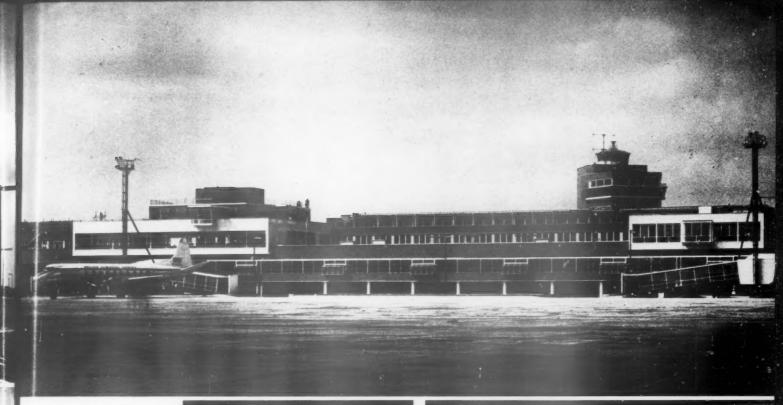
pendent structure, with staff canteens and medical facilities grouped around its base, and the control rooms occupy the upper floors. A large vertical trunk holds lifts, air-conditioning and services, and all control rooms have false floors, permitting the maximum flexibility in the distribution of cable-runs, etc. There are three main operations rooms—on top of the block is the room housing Aerodrome Control, whose responsibilities of over-all command make visual supervision of

the complete hemisphere of land and sky essential; two floors below them is Approach Control, where the tricky problems of bringing-in and dispatching are sorted out via a large display board two storeys high; and Ground Control, another storey down.

The completed building on the south-eastern face is probably the largest and most complex passenger-handling installation in the world, but built around substantially the same two-level processing diagram as can now be found

af all modern airports. The building may be divided into two main levels, the lower for luggage, the upper for passengers; along its length it may be broken down into twelve processing channels; and from land-side to air-side it stratifies into concourse, customs, immigration, health, waiting and ramps to aircraft (see frontispiece page 4).

Thus the processing of a traveller takes him up by escalator to the main concourse, and into the customs hall where he meets his bags,



On facing page: Above and below, right, the land-side of the passenger-handling building.
Below, left, the layout as it will look when the eastern apex building is completed. On this page: Top, the air-side of the passenger building. Centre, left, ground-floor entrance hall on land-side, Centre, right, main concourse from second-floor balcony. Bottom, left, north-eastern waiting room, Bottom, centre, cantilevered window on the air-side. Bottom, right, passengers' ramp to the aircraft standings.





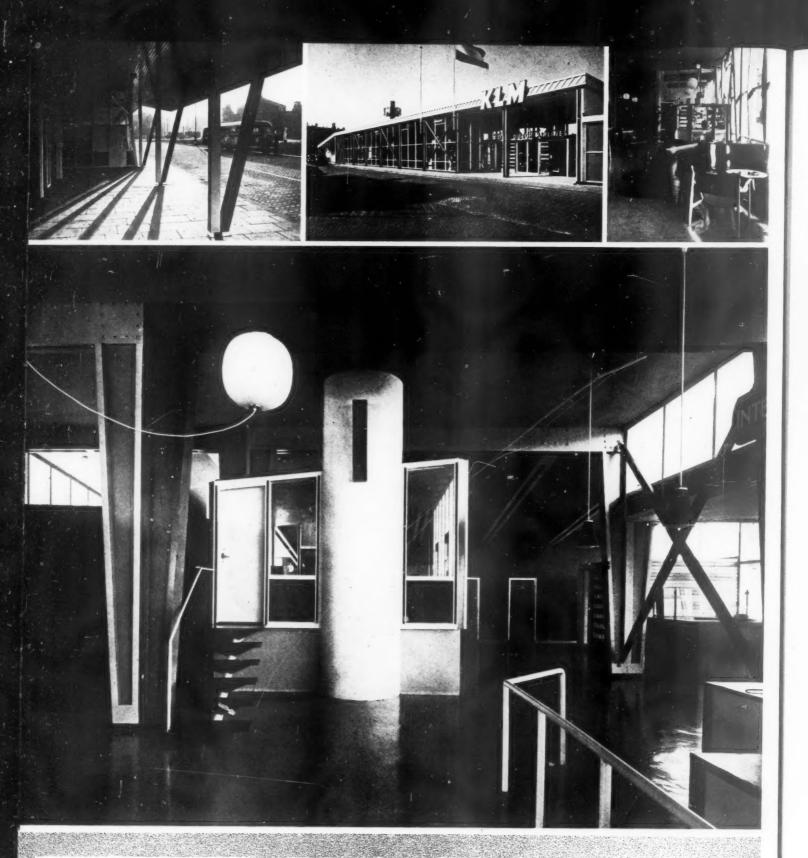




which, after checking, then go down to ground-floor level for transit to aircraft. The passenger continues at the upper level and emerges in the waiting rooms, on the air-side of the customs barrier. The comparative rigidity of the three-dimensional processing diagram is softened and diversified by the presence of a large central interruption comprising transit passengers' restaurant and lounge on the air-side, and a grand central concourse on the land-side.

On the second floor is a smaller central concourse overlooking the main concourse below (see frontispiece page 4), offices, a restaurant, and roof-gardens, one of which is a "waving base", while at the highest level of all are more terraces and gardens for spectators.

Work is proceeding on the eastern apex building, which will provide further passenger-handling channels, and increased spectator areas. All structures are in steel throughout, laid out on a regular twelve-foot grid, floors and roofs are mostly of reinforced concrete precast units, walling mostly in brick or glass, with some areas faced in stone, though the customs halls have a roof carried on exposed steel portal-frames with monitor lights. Service runs are carried in deep ceilings, many of which, toward the air-side, are faced with acoustic tile, and most rooms in the control tower have double-giazed windows to reduce the effects of aircraft noise.



#### Amsterdam Air Terminal

Architects: Joh. H. Groenewegen and H. Mieras.

It is at the bus-terminal that the 'processing' of the passenger and his baggage begins, and at either end of the building at Amsterdam Terminal is a counter: one where the passenger hands over his bags to the airline at the beginning of the journey, before he boards the bus for the airport, the other for

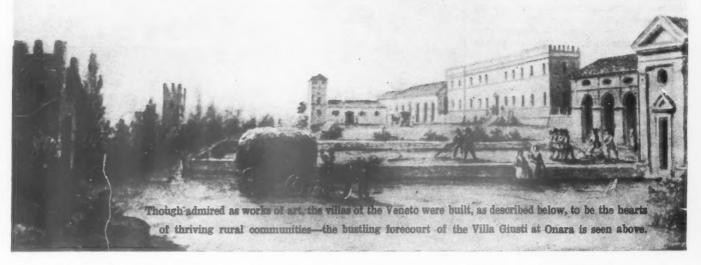
the collection of bags on arrival from the airport at the end of the trip. Thus the main traffic flow through the building is across the ends, and this manifests itself in a differentiation of structure, the ends being, in general, lower and wholly or partly under pent-roofs carried, in the case of the departures canopy, on V-strut legs. Between these two ends is an area of less directed circulation, with waiting-space, kiosks for magazines, etc., enquiry, ticket and hotel-booking desks.

refreshments and bureaux-de-change. All the public part of this area is under a continuous flat roof carried on pairs of laminated wooden portal-frames, but the purely administrative area of this central block is housed under a lower roof along the north-west side, leaving clerestory windows above to light the public part. The manager occupies a small raised office at the junction of the arrivals area and the central space, and the cellar for the heating plant is directly beneath.

### PALLADIAN VILLAS

AS RURAL CENTRES

Georgina Masson



'A city is nothing less than a great house, and conversely, the house is a small city said Andrea Palladio in his 'Quattro Libri di Architettura,' when discussing the ideal site for a villa. He went on to outline the requirements of the villa itself; and his opening phrase illustrates the special meaning of the word in renaissance Italy, which was quite different from the sense in which it is generally used to-day. Then, a villa was a country estate, not merely the dwelling house of the owner; and what we now call a villa was originally regarded as an additional convenience which enabled the landlord to oversee the administration of his land in comfort; combining business with pleasure, in bringing his family away from the heat of the city in summer, while he supervised the gathering in of the harvest and the vintage.

By Palladio's day, the holiday aspect of the villa had already increased in importance, and he wrote 'A villa requires two sorts of buildings, one for the habitation of the owner and his family, and the other for the control and storage of the produce.' But after having stated somewhat summarily that the landlord's house should be made 'with due regard to his family and position,' Palladio devoted his attention to planning in detail the farm and administrative buildings, or 'Barchesse' as they are still called in the Veneto to-day.

In view of this it may appear curious, at first glance, that so much has been written about the æsthetic aspects of the 'habitation of the owner' in the villas of Palladio, and so little about their practical planning as the administrative centres of large estates; in an age when a country house was of necessity a 'small city,' and a self-supporting one at that.

This omission becomes more readily understandable when it is remembered that practically none of Palladio's plans were completed in their entirety. Construction was usually begun on the owner's house, and often ended there; leaving the farm buildings to be erected in a haphazard, but more economical, fashion afterwards. Also that Inigo Jones, and the young man of fashion of Lord Burlington's generation, were much more interested in Palladio's interpretation of classical architecture than the practical principles underlying his planning of the farm buildings, which usually only existed on paper anyway, and were designed to accommodate the produce of mediterranean agriculture in a climate very different from our own.
As a result, Palladio's villas have come

As a result, Palladio's villas have come to be regarded pre-eminently as pleasure houses, built for the 'Passatempi in villa' familiar to us from the paintings of the Venetian school. Whereas, in actual fact, they were the first non-clerical centres of rural life consciously planned as such, upon what was believed to be the classical model. In this they were unique, for although the sixteenth century was a period of great development in the evolution of the French chateaux and English country houses, which fulfilled similar functions, Palladio's break with traditional styles, and planning of an organic whole, was far in advance of contemporary building in northern Europe.

Three factors combined to enable Palladio to make this change, which appears to be so revolutionary, but which had in fact been maturing for more than a generation before he arrived upon the scene. In 1404, the Venetian Republic gained control, by treaty, of the wide area of land which stretches to Verona and which later came to be called the Terra-

ferma.' This was the first step. For the constant battles of the tyrannical 'Signori' of each little city was substituted the protection and strong central government of a world power; bringing public order and prosperity in its train.

The transition was gradual; and Crescenzio in his 'Trattato di Agricultura' (published in 1490 but written earlier) was still largely concerned with the strategic siting and defences of his country landlord's house; considerations which were entirely absent from Palladio's mind, when discussing the siting of his villas in the 'Quattro Libri,' published only eighty years later; in spite of the ruin wrought by the intervening war of the League of Cambrai.

An interesting picture of this period of transition is given in the 'Itinerary' of Marin Sanudo, which is a narrative, written and illustrated by the famous diarist on his journey through the terraferma in 1490. He described the decay of the mediæval towers and castles on the one hand; and the beautiful villas, with their gardens growing up on the other. Sanudo made a special note of another interesting feature; where a villa was the property of a citizen of Venice, as opposed to a local family, he says so; and thus affords us an indication of the speed with which the Venetian merchant-patrician had seized upon the opportunity of investing his capital in the newly secured terraferma; when the discovery of America and the voyages of the Portuguese navigators looked like threatening his practical monopoly of the oriental trade.

If the pacification of the terraferma, and the currents of world trade had provided the land and the money; it was left to the philosophy of humanism to give the

inspiration which set the fashion for country life; and to provide it with a suitable setting. It is notable that the earliest existing record of a description of the joys of country life in the Veneto, and a detailed description of a villa, come from Vicenza. They occur in the letters of Bartolomeo Pagello, who was the first of the humanists of that city to present the simple joys of country life in a villa as a new Arcadia, suitable for the relaxation of a scholar and a man of letters. Pagello was born in 1440, he was left a villa, or estate, when still a young man; and he was the first Vicenzan to convert it into a villa in the renaissance sense, of a place for cultured relaxation, as opposed to purely

agricultural utility. In a letter to the artist Bernardino Leoncino, brother of a fellow humanist, Pagello outlined his requirements for the villa which Leoncino was to design for him to build at Lonigo. The letter clearly illustrates the conscious modelling upon classical lines which lay behind the design of these villas. Pagello said that he did not want his to be like that of Pliny the younger, but that 'It will be enough for me if only one portico runs to a pleasant garden. . . . There should be rooms . . . not luxurious but suitable to the general use; and there should be a sufficiently elegant library beside the bedroom for my only essential chattels (his books). In the garden, many apples, pears, and pomegranates, damascene plums, and generous vines; and many plane-trees near the house, and clipped box, and most beautiful bays; and a fountain more clear than chrystal, dedicated to the muses like the Castalian

The other humanists swiftly followed Pagello's lead, and during the last twenty years of the fifteenth century the country round Vicenza saw the rise of the suburban villas which were the meeting places of the academies; among the most famous of which was that of Gian Giorgio Trissino at Cricoli. Very few of these villas have survived, however, for they were nearly all destroyed or badly damaged in the savage fighting of the war of the League of Cambrai, which began in 1508, and during the succeeding years of war in Italy there were more serious matters to consider than the

spring at the foot of Parnassus.

building of villas.

Gian Giorgio Trissino appears to have been the first to pick up the threads of life after the wars, and his Cricoli Villa, which was entirely transformed, provides an interesting illustration of the transition from the old style with its corner towers which could be used for defence, to the new, with its classical orders and statuary. It is interesting to note that this villa of his patron is the first with which Palladio's name has been tentatively associated.

Thus Palladio found the field prepared, and full opportunity to display his genius. Venice appeared to be at the height of her glory; her hegemony over her hinterland was secure; and her patricians were free to expend part of their vast wealth on the acquisition of land, and the building of country houses which would, at one and the same time, provide them with a sound investment; and enable them to follow the current mode for indulging in the joys of country life in this new Arcady. The old castles and the gothic villas had been destroyed by war, and the way was clear for the building of the country houses which would accord with the new fashion for villas in the classical style, built according to the canons of Vitruvius. In actual fact the similarity of layout between the Venetian villas, and Horace's Sabine Farm, near Licenza (which has only been excavated during this century) is indeed remarkable.

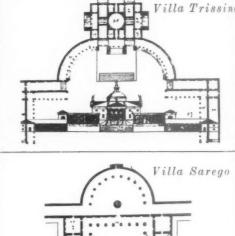
A comparison between the 'Quattro Libri' and the books of the Civil Architecture of Vitruvius reveals to what an extent Palladio was indebted to Vitruvius, not only for the principles of classical architecture, but for the actual practical planning of farmyards and siting of his villas as well. He was also evidently much influenced by his namesake Rutilius Taurus Aemilianus Palladius; the Latin author of the fourth century whose writings on agriculture were much quoted by Crescenzio in his 'Trattato di Agricultura.'

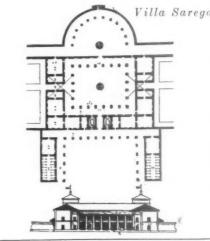
All these three authors lay emphasis upon the importance of the health of the site; and upon good air and water. Palladius tells his prospective landlords to look well at the peasants to see if they are of a good colour and cheerful disposition; advice which was repeated by Palladio writing more than a thousand





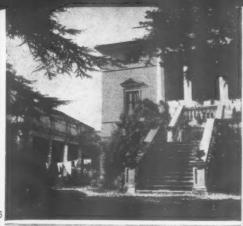




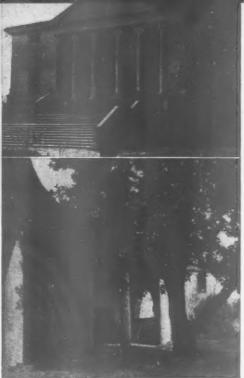


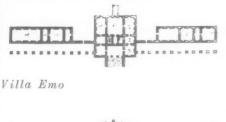
2, Villa Trissino at Cricoli, early and showing transition from fortified manor to 'Palladian' gentleman's country residence; 3, V. Sarego at Sta. Sofia in the Valpolicella, a fragment: no more was ever built than is shown here: 4 and 6, V. Emo, Fanzola; 5, V. Torinieri, near Vicenza, each showing relation between barchesse and landlord's

house; 7, V. Badoer, Fratta Polesina; the farm buildings behind curved colonnades; 8, plans (from the Quattro Libri). Of the actual V. Trissino, almost nothing derives from Palladio, but his remarkable plan survives. At V. Badoer, the granaries lie over the main rooms in the central block, and behind the colonnades are the farmer's and steward's lodgings, stables, etc. At V. Emo, kitchen and cellars are underneath the house; other offices in the wings. V. Poiana has granaries above and domestic offices below main apartments which stand 5 feet off ground level. The yards on either side contain respectively a garden and other places for the use of a country-house' (as close a description as the townsman Palladio could produce). The colonnades at V. Maser lead to a dovehouse on the left and, on the right, to 'places for making wine and other places for the use of the villa.'

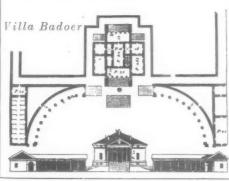


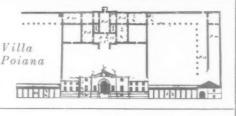


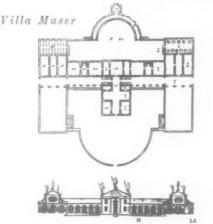












years later, when the scourge of malaria was even more widespread in Italy; he also advised pouring water on a white cloth to test its purity.

Palladio also evidently followed the commonsense rules laid down by Vitruvius and Palladius on the arrangement of the farm buildings—that the granaries should be above ground and cool and dry; cellars should face north for the same reason; hay and fodder be stored in open barns to prevent fermentation and fear of fire; and passages and stairs be built wide and well lit for the use of labourers carrying burdens and bundles.

The long colonnades which were designed

to flank most of Palladio's villas, and have called down so many accusations of extravagance upon his head, were primarily intended to connect the owner's house with those of the agent, foreman, and the labourers' bothy; and the dove cots, poultry yards, stalls, stables, barns and stores. That their object was primarily utilitarian is evident from Palladio's description. He said 'they must be attached to the owner's house so that he can go everywhere under cover from the rain and the hot summer sun... they are also very useful for providing cover for wood and for the infinite number of things of the villa which would be ruined by the sun and

rain; these porticoes are also very ornamental.' Their usefulness in the more temperate climate of England is less apparent, but anyone who has experienced the scorching heat and violent rainstorms of the Veneto will appreciate Palladio's point.

Palladio directed that the stalls and stables should be built far from the owner's house; to avoid the smells of the manure heap, but that the latter must be open to the sun and light. Likewise he advised that the threshing floor should not be too near either, because of the dust, but added a prudent note that it should be near enough for the master to keep an eye on the work; and with a portico flanking at least one side of it; so that if the weather changed suddenly the grain could be carried quickly into shelter.

Some of Italy's most famous wines, such as those from the Soave and the Valpolicella, come from the area in which the Palladian villas were built, and it is not surprising to find that in the 'Quattro Libri' Palladio's instructions for the building of the cellars are given with particular care. He said 'they should be underground, well shut in, and far from all movement, damp, and smells, and should have an east or north light; because if they face in other directions the wine might be weakened and spoilt by the heat. They should be made with the floor sloping towards the centre and the floor should be of 'Terrazzo' (the special flooring made of fragments of marble, known in the rest of Italy as 'Veneziano'), or paved, so that if the wine is spilt it can be collected. The casks where the wine ferments should be under cover near the cellars and raised so that the bung holes are higher than the mouth of the highest barrel, so that either by a system of funnels (maniche di coro) or wooden pipes, the wine can be directed into the barrels.

With the same care for detail, Palladio lays down that the granaries should have a west light, so that 'they will not become heated, and will be cooled by the wind . . . their floor should be "terrazzato" or at least of boards, because grain goes bad if it touches lime.' The other store rooms should face west for the same reason; but the open barns (teggie) for the fodder should face south because the drying effect of the sun will prevent the hay from fermenting and going on fire.

None of the larger and more comprehensive of the villas of Palladio which illustrate these principles in every detail were ever completed in their entirety; the most outstanding of them would have been the Villa Thiene at Quinto and the Villa Trissino at Meledo; of which only fragments of the original design remain; if they had been completed, it is unlikely that the practical aspects of the layout of the villas as the administrative centres for the estates of their owners would have been passed over as it has. In designing Villa Thiene, Palladio must have taken the ancient Greek villas as his model; this is evident from comparison of its ground floor plan with that of the Grecian villa in the Quattro Libri.' The small portion of the Villa Thiene which was actually built now stands in the village street of Quinto, and has only been preserved from complete degradation by its present use as town hall.

So little of Villa Trissino at Meledo was ever completed according to Palladio's plans, that the existing building is not recognizable as such, but the sweeping lines and hemispheres of its colonnades live in Stowe, and Prior Fark at Bath.

In contrast to this sad list of might-havebeens are the Villas Barbaro at Maser, Emo at Fanzolo, and Badoer at Fratta Polesine. The first, owing to the magnificence of its Veronese frescoes, and the public spirit of its owner, is known to any Palladian enthusiast who has visited the Veneto. But the other two, especially the exquisite little Villa Badoer, appear to be very little known; although they share with the Villa Barbaro the honour of having survived as the most complete examples of Palladio's country house design. To this list must be added the Villa Poiana at Poiana, and the Villa Sarego at Santa Sofia in the Valpolicella, which are of particular interest to any student of Palladio's country houses; also the suburban Villa Tornieri near Vicenza.

There is a strong superficial resemblance between the Villa Barbaro at Maser, and its neighbour Villa Emo at Fanzolo. In both of them the 'barchesse' (the Venetian term for the farm buildings) flank the central block of the owner's house presenting a unified façade of great length. Here the resemblance ends, however, for the Maser Villa, owing to its hillside site, has only one storey at the back and the piano nobile spreads over most of the length of the first floor of the building; with the store rooms, cellars, and kitchens, beneath on the ground floor; backing on to the hill behind. Villa Emo is much more typically Palladian in style; the cellars and kitchens were sunk in the semi-basement floor beneath the owner's house, while the granaries occupied their usual place in the shallow upper floor behind the pediment. Although the loggias of the 'barchesse' present a unified front with the central block of the house, when viewed from the front: in actual fact the store rooms and stables behind were originally separated at some little distance from the house, and were only linked to it by the loggias. (For some time now, the stores have been used as living rooms and the original plan altered); the villa faces south, and contrary to Palladio's tenets the store rooms also opened in this direction; but the loggias are of sufficient width to prevent the sun from beating directly upon them. The stables were at the extreme end of the western wing.

Although it is conceived upon a much smaller scale, there are many points of resemblance between the Villa Badoer at Fratta Polesine and the Villa Emo. The central block of the owner's house is raised above the colonnades of the 'barchesse' with a similar arrangement of the kitchens and cellars below, and the granaries above, the piano nobile (the original arrangement has now been transformed in both houses). Both have recessed porticoes in front, and in both the original paved walk from the entrance gate to the portico has survived.

There is a sad difference between the two houses, however; whereas the Villa Emo is still in the possession of the family for whom it was originally built and is maintained in excellent condition, the

Badoers are long since extinct; and the villa, which was completed with only minor alterations of Palladio's plans, is in a condition of degradation verging upon the derelict. This is all the more tragic because the Villa Badoer, although built on a miniature scale (the piano nobile has only seven rooms) is architecturally on a par with the Malcontenta and the Rotunda; and is complete in almost every detail. The original wrought iron gates, the surrounding wall (similar to that shown flanking the Malcontenta in the 'Quattro Libri'), the flagging of the garden walks, the marble well-head, the fountains, and even the frescoes 'the most beautiful grotesques of Giallo Fiorentino' mentioned by Palladio in the 'Quattro Libri,' which were already believed to exist no more in Bertotti Scamozzi's day; are all still there (the frescoes are hidden beneath coats of whitewash, but the writer could see portions of them in a fair state of preservation where the whitewash has been rubbed away by the villagers parking their bicycles in the central salon; no one else appears to have known of their existence).

The grace of the whole composition of the villa and its dependences, and what Bertotti Scamozzi described as 'An air of magnificence which is surprising' are, as usual, combined with strict attention to practical requirements. The landlord's house is raised upon, and surrounded by, two walls of enormous thickness, which make a platform eleven feet wide all round the house. The disastrous floods in the Polesine two years ago appear to bear out the truth of Bertotti Scamozzi's assertion that they were built as a protection against flooding. Already in his day the accommodation for the agent and foreman, and the stores and stables which Palladio describes as being situated behind the curved colonnades, had been converted to other uses; and today large numbers of peasant families are lodged there. Nevertheless, it is still possible to trace their arrangement facing north and west, while the stables must have opened directly on to the lane which borders the garden wall on the south side.

The Villa Poiana at Poiana appears to be as little known, and quite as derelict, as the Villa Badoer; although it is more easily accessible as it belongs to the Monti Berici group of Palladio's villas. Six peasant families are lodged in the central block of the landlord's house alone; and the frescoes of Bernardino India and Anselmo Canera crumble upon the walls of rooms, which have in many cases been partitioned off in order, presumably, to enable the landlord to squeeze as many rents as possible from the tenement of his creation.

From the point of view of its planning, though it was never completed according to Palladio's design, the Villa Poiana presents aspects of considerable interest. There is the usual arrangement of granaries and cellars above and below the piano nobile; which are still put to the use for which they were intended. A row of farm buildings, of much later, and haphazard, construction take the place of the 'barchesse' of Palladio's design; but it is possible that the open barns for fodder, with their stone flagged floor and Tuscan

columns, may have been part of the original building; for they are sited according to Palladio's original layout. In the right angle made by the farm buildings and the barns are the threshing floors; conveniently placed so that the master could keep his eye on them from the loggia of the house, and so that the grain could be hurried into the shelter of the porticoes in case of rain. There is little doubt that the walls which divide the threshing floors from the garden and orchard, and surround the whole layout, were of Palladio's construction as they conform to his plan and are similar in construction to those of Villa Barbaro at Maser, which is more than fifty miles away. They are built of rough stone and surmounted by flat and circular bricks.

mounted by flat and circular bricks.

The Villa Sarego at Santa Sofia near Pedemonte in the Valpolicella, is also little known; but, happily, it is in the possession of owners who maintain it in excellent condition. The villa was built for Marcantonio Sarego, who married Ginevra Alighieri, the last descendant of Dante. Although only a small part of the original layout was built, this villa is well worth studying as being the only one which its designer described as being particularly appropriate to country life. He wrote in the 'Quattro Libri' that the columns were 'made of undressed stone, which seems more suitable to a villa; to which are adapted things which are plain and simple rather than delicate.' This same rustic style is to be observed in the few constructional features, such as door frames and fireplaces, which were actually built. Of the original layout of enclosed courtyard and garden for the owner, and partly enclosed court for what Palladio called the 'cose della villa,' only half the owner's courtyard was ever built; but from examination of the design it is evident that the villa was planned with Palladio's habitual attention to practical detail.

The Villa Tornieri is so near Vicenza as to come within the category of suburban villas. Unlike the Rotunda, and Villa Pisani at Montagnana, however, where the interest is evidently concentrated upon the owner's house; the Villa Tornieri was particularly well furnished with the farm buildings suitable to a country villa. The right angled turn in the flanking loggias enables them all to be disposed facing in the various directions laid down by their author as appropriate to their various functions. As at the Villa Badoer, the stables must have opened on to a small side road.

The Villa Tornieri has also now fallen upon evil days, and is divided up between several families, and the farm buildings are used as workshops. But in spite of this, and the town which has grown up around it, with trams running before the door, it has somehow still managed to preserve something of the atmosphere which pervades Bartolomeo Pagello's letter to Bernardino Leoncino, and what our own Sir Thomas Wyatt described as:—
'This maketh me at home to hunt and hawk

'This maketh me at home to hunt and hawk And in foul weather with my book to sit In frost and snow then with my bow to stalk No man doth mark where I so ride and go In lusty lees my liberty I take

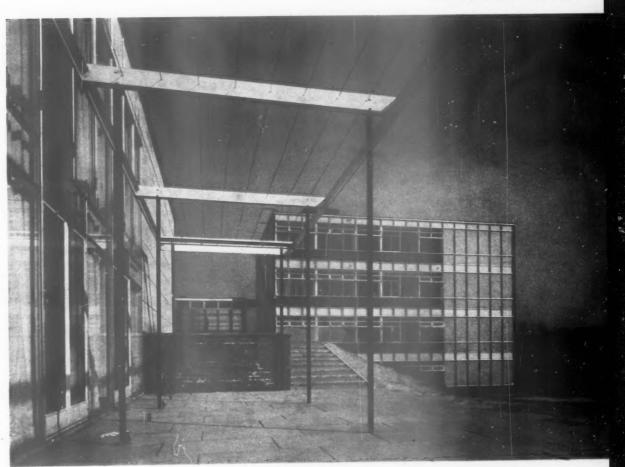
Here I am in Kent and Christendom Among the muses where I read and rhyme.'



## SOE DES by the Architects' Co-Partnership

## SCHOOL AT CHADDESDEN, DERBYSHIRE

1, classroom block from pergola.



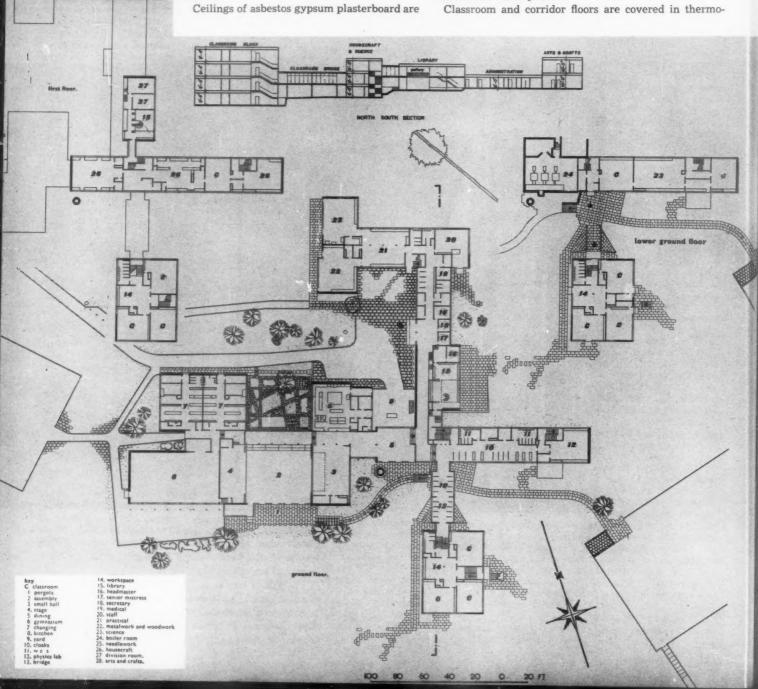
This is a secondary modern school for 600 children. Chaddesden, which is two miles from the centre of Derby on the Nottingham road, is developing as a new neighbourhood around an old village.

The school site is on the northern slope of a valley running east to west. Due to the sharp slope, it has been possible to arrange for various groups of one-, two-, threeand four-storey buildings to intercommunicate at different levels. Of the twenty-four acres of the site the whole usable area is taken up with playing fields, and a turfcovered hardcore service road gives access to all the main pitches for maintenance machinery.

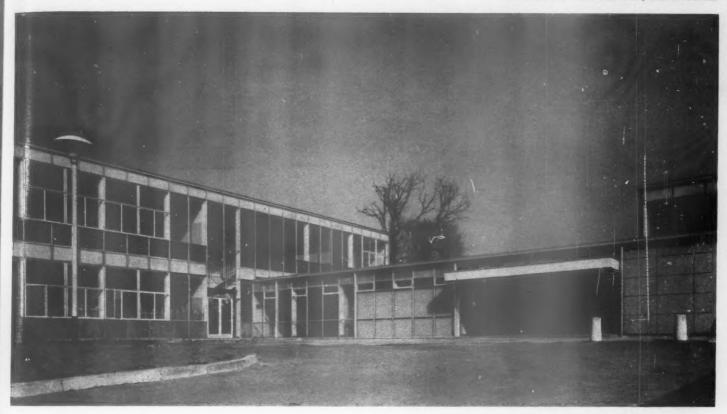
The building uses a system of structural frame which has already been developed for other schools. It is made up of welded light steel beams and columns on a module of 3 ft. 4 in. For the outside walls the patent glazed cladding has been developed. Windows, external doors, fixed glazing or resin-impregnated plywood panels (used where glass could be endangered, as at ground level) are fixed directly into the glazing bars. The internal lining of the wall is made of a three-ply laminated board, and the outer layers are of asbestos cement sheeting, pressure glued on  $\frac{1}{2}$  in. cork coring, and screwed

on to special fixing slats welded to the back of the glazing bars. An air-space is left between the glass and the external face of the lining which is stove enamelled in brilliant colours

suspended from the bottom boom of the structural beams. Internal partitions are preformed panels of two sheets of plasterboard glued to honeycombed hardboard core; all partitions are dry mounted from floor to underside of beams and are accommodated in specially dimensioned pressed steel door frames which act as additional support to the partitions. Internal partitions surrounding staircases have an additional sheet of plasterboard glued to the stairwell face of the partition in order to increase fire resistance to the required standard. Where internal partitions are the only means of sound reduction between classrooms two thicknesses of preformed panels have been used and this situation only arises in the case of three rooms. During the planning stage of the design it was accepted that the majority of cheap partition materials had a low sound insulation value; stores, heater cabinets, and other areas were used as baffles wherever possible. All exposed internal stanchions are encased in fibrous plaster.



#### SCHOOL AT CHADDESDEN, DERBYSHIRE



2, the arts and crafts block, above left, joined by the single-storeyed administration centre.



3, cloakroom, looking east; door ahead leads to physics laboratory, door at left into w.c.s.



4, library: galler, and helical stairs.



5, bridge linking science and class-room blocks.



6, stairs on west side of long central passage.

plastic tiles; the hall and gymnasium in hardwood laminated plank; stairs and lobbies in linoleum; the entrance hall is finished with a ceramic tile floor. Roofs are formed of wood-wool slabs screeded and covered with three-layer bituminous felt over all classrooms and administrative rooms. The roof over the gym and metal and woodwork rooms is formed of aluminium decking with the underside left exposed, covered with insulation board and three-layer bituminous felt finish.

SCHOOL AT CHADDESDEN, DERBYSHIRE

### SCHOOL AT SHEFFIELD, YORKSHIRE

1, typical 'workspace' in Tower Block.





2, passage from assembly hall to Tower Block, school entrance right; below, south view of school, with Tower Block, left centre, and the entrance court, extreme left.



#### SCHOOL AT SHEFFIELD, YORKSHIRE



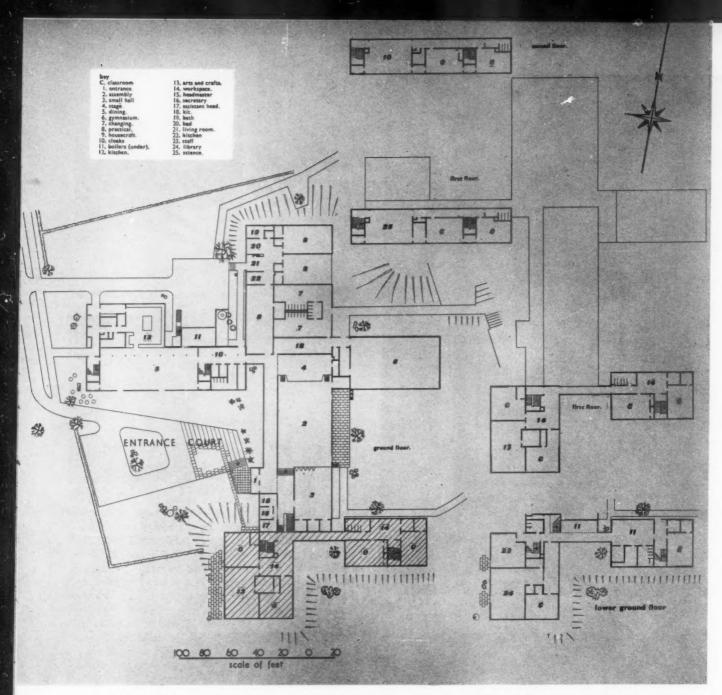
This is a secondary modern school for girls with 600 pupils. The site is on the extreme edge of Sheffield (S.E. along City Road from the city centre, and a quarter of a mile before the village of Intake) and has distant views over the south and south-west. The part of the site on which the school stands was formerly divided into fields with hawthorn hedges, and as many as possible of these hedges have been retained. There were extensive shallow old coal workings under the site and precautions

had to be taken with foundations.

The school is planned on a 3 ft. 4 in. module. The teaching rooms are in three three-storey blocks at the corners of a single-storey building which consists of the assembly hall and small hall. The objects of doing this were to



4 and 5 above, passage (2) seen as half-landing to Tower block; below, assembly hall, looking south.



reduce the apparent internal scale of the building and to focus the whole activity of the school on the assembly hall. The main entrance gives direct access to the halls block. Most of the practical rooms are mingled with the teaching rooms, but the remainder—the general practical room and three housecraft rooms—form a north wing together with the changing rooms. Each floor of each teaching block forms a small unit within the school and most of these have a work space.

The hall is planned with a raised floor on three sides, formed by the stage, a circulation gallery open to the hall, and the small hall which is enclosed by sliding folding doors. The stage curtain, designed by Gerald Holtom, is arranged so that it can be hung across the rear wall of the stage as an alternative to the front of the stage, so that the large space formed by the halls and gallery need not be interrupted more than necessary while allowing easy conversion to make a formal stage. It is hoped that this arrangement of levels and spaces can be used in a variety of ways. The small

hall, for example, will provide an alternative platform or stage, while both it and the gallery will serve as additional accommodation for an audience. A performance could also take place in the body of the hall while the spectators sit on the stage and in the gallery and the small hall.

The system used is 3 ft. 4 in. lattice steel frame with patent glazing curtain walls. The lining behind the curtain wall, where there are solid external walls, is of clinker block rendered and finished with silicate paint. Internal partitions are of dry construction consisting of plasterboard units extending from floor to ceiling. Ceilings are also of dry construction, and panels can be removed for access to the principal services which are in the thickness of the floor. The floors of corridors, classrooms and lavatories are finished in thermoplastic tiles and those of the assembly hall, stage and science room in wood block. Wood strip is used in the gymnasium, and quarry tiles in the kitchen and on parts of each housecraft room.

### SCHOOL AT HATFIELD, HERTFORDSHIRE

The site of this three-form entry secondary modern school for 450 pupils is virtually flat and lacking in character except for a few mature trees near the boundaries. The new Great North Road runs near to the west boundary of the site, on the farther side of which, within a few hundred yards of the school, is an aircraft works where jet engines are tested. The noise of this testing

affected both placing and design.

The courtyard with the assembly hall forming its east side is planned as the core of the one-storey building. The pool in the courtyard which is used for biology has been designed to throw a pattern of reflected sunlight up

on to the low part of the ceiling in the assembly hall.

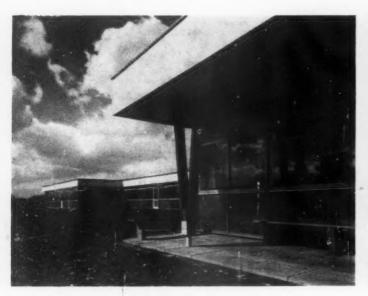
The frame consists of 'V'-shaped hardwood stanchions giving 8 ft., 9 ft. 4 in. and 16 ft. ceiling heights, which support main beams spanning from 10 ft. to 30 ft. in modules of 3 ft. 4 in. All main beams are 2 ft. deep, 6½ in. wide, made up of timber lattice construction, lined both sides with 6 mm. plywood. Deep main beams of



1, central courtyard, looking north, with pool used for biology.



2, general south-west view of school; higher roof level, centre, indicates hall and gymnasium.

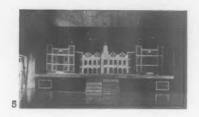


3, view from south end of library towards classroom range.



4, passage, with wall showcase, looking towards library.

#### SCHOOL AT HATFIELD, HERTFORDSHIRE





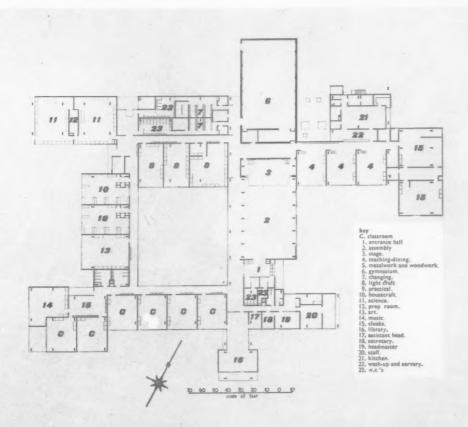
5, stage backdrop in assembly hali, showing Hatfield House, represented in needlework; 6, passage running between assembly and courtyard, and 7, exterior of music room at south-west corner of buildings.

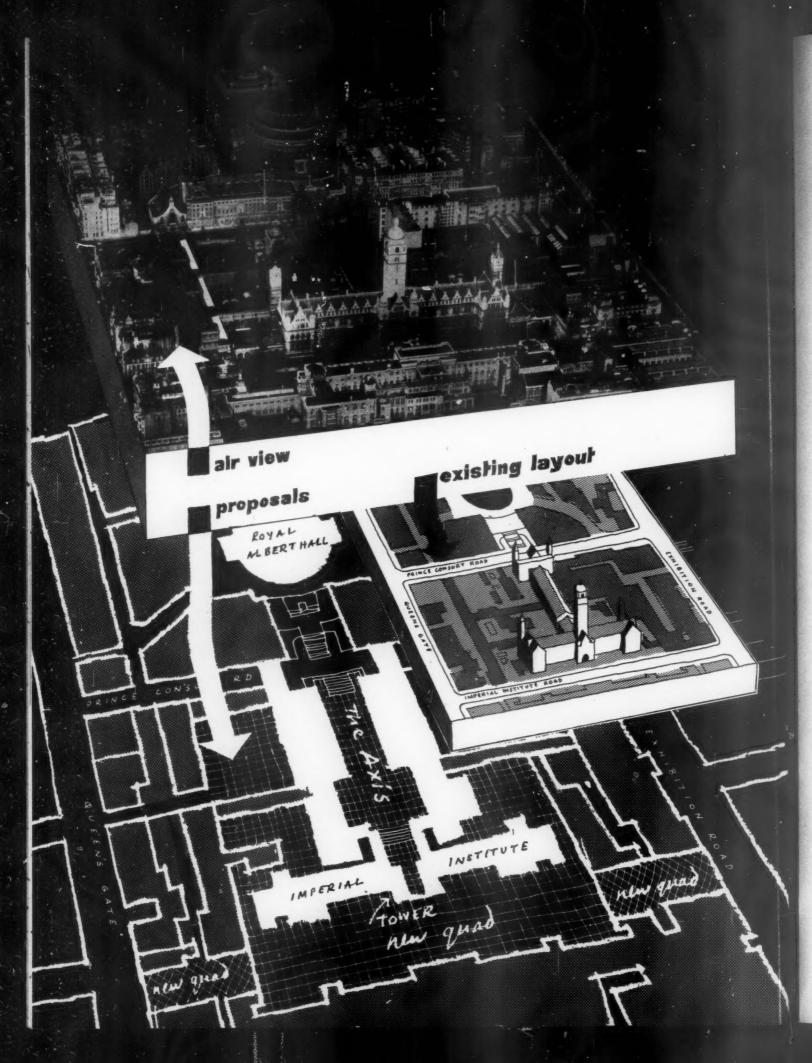
the same construction, but giving a low pitched roof span of 40 ft. are used in the assembly hall. A similar type of beam with slightly greater span is used at 10 ft. centres in the gymnasium, supported on brick piers in a 13½ in. load-bearing brick wall. Certain main beams can cantilever 8 ft. 4 in. and cantilever brackets 1 ft. 8 in. and 5 ft. similar in construction to main beams can be fixed to columns. Secondary beams which are similar in construction to main beams, but without the ply sides, span at 3 ft. 4 in. centres between main beams in spans from 6 ft. 8 in. by 23 ft. 4 in. in units of 3 ft. 4 in. They are fixed to main beams with metal shoes. The roof is three-ply roofing felt laid flat on corrugated aluminium decking, covered with ½ in.-thick insulation board.

All external walls, except the gymnasium, are non-load-bearing. The internal walls are 4½ in. hollow breeze block plastered both sides. Ceilings are 3 ft. 4 in. square panels of perforated plasterboard, butt jointed, nailed to nogging, fixed to the secondary beams and overlaid with 1 in. fibreglass. The external soffits to cantilevered parts of the structure are finished with ½ in. external quality 'V'-jointed plywood. The assembly hall ceiling

is fibrous plaster on wood framing fixed to of the main beams. The veneered blockbover the forestage is framed and susperceiling on mild steel strap hangers from

is fibrous plaster on wood framing fixed to the underside of the main beams. The veneered blockboard resonator over the forestage is framed and suspended from the ceiling on mild steel strap hangers from the underside of the roof and the side of the adjacent main beam. The assembly hall, wood and metalwork rooms, and science rooms have wood-block floors. The gymnasium and stage have wood-strip floors. The kitchen, changing rooms and all lavatories have coloured concrete tiles; the headmaster's room, staff rooms and library have cork, and the remainder of the building thermoplastic tiles.





The concealed University of South Kensington lies hidden in buildings which fail to validate not only the properly collegiate nature of their layout, but also the grand planning axis which governs the whole of the academic zone from the Natural History Museum to the Albert Hall. In a diagrammatic breakdown of this situation, opposite , Gordon Cullen shows, top, an air-view of the whole district—and even in this view, denied to the pedestrian, the collegiate and axial qualities of the plan barety register. In the central diagram he isolates the building which causes the muddle—the Imperial Institute, which smothers the axis instead of revealing it—and in the plan, bottom, he shows how the proposal to rebuild and extend the Imperial Institute can be made an occasion to right both wrongs without losing any accommodation.

Gordon Cullen

# The Lost Axis

# The Imperial Institute recreated as a University centre

There is a University\* in South Kensington. You wouldn't think so just by walking along Queen's Gate or Imperial Institute Road. You might notice that quite a high percentage of the people you saw on the pavements were young and fresh faced. You will also see a great many ancient Austin 7's. You might wonder why.

There is no sign of a University—just the usual wide, windy streets of Kensington—flanked by monumentally institutional buildings. Most of these are occupied by the University and one block of them, the area bounded by Prince Consort Road, Imperial Institute Road, Queen's

> Gate and Exhibition Road, is being handed over to the Imperial College of Science for an expansion programme. When this programme is complete South Kensington will be even more of a university.

> But unless someone sees the light it will still not look like one. Kensington by tradition is the home of the stockbrokers' palazzos (stucco on the front and stock brick and drain pipes on the back)—and whether for this reason or not the collegiate principle of planning has never been adopted in Kensington.

> And yet the queer thing is, though you never see it unless

you get into an aeroplane, the colleges are built on the collegiate principle of quads or courts and even cloisters, with fronts and backs and insides and axes. There is even a main axis. Instead, however, of being treated as the final product, as they are at Oxford and Cambridge, these collegiate patterns have been treated as moulds into which Nissen huts, oil drums, extract fans and odd university buildings are poured, and then allowed to set, so that the resulting site plan is a solid impenetrable block which keeps all circulation on the outside. You don't go through the 'colleges', you go round them-round the outside for which purpose enormous wind-swept streets have been provided.

they are back yards to be avoided. The REVIEW proposes that this should be reversed, and that the interior landscape be exploited by re-creating quads and by opening an axis between the Albert Hall and the Tower of the Imperial Institute thus drawing them into the heart of the University.

What you see from the outside is all you are supposed to see

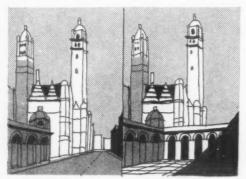
for the apparent precinctual pattern is an illusion. Instead

of being pedestrian courtyards meant to be walked through

In the developments now foreshadowed for South Kensington, the great thing it seems to us is to put right this wrong, by using the new building development to seal off the windy streets

<sup>\*</sup> Actually, parts of London University together with other bodies also providing further education; but in effect and in extent a niversity—and with the proposed extensions, one that will provide for five thousand students.

and open up the interior of the quads. This would come very much cheaper and would have the great advantage of saving the best buildings and getting rid of the clutter. Instead of handing over to the housebreaker one of the great monuments of Victorianism, Collcutt's Imperial Institute, a building of immense character distinguished by what in England is the rarest architectural quality—scale—one of the great buildings of London in fact—it should be possible by ingenious manipulation of interior space to add all that is required in the way of accommodation and at the same time open up the collegiate plan. Obviously we can't produce a general



Left, Imperial Institute Road. The accent is on Road for the University stops at the pavement. But by enclosing the road (right) the space that was neutral becomes University space and the buildings change from facade to sculpture.

plan for the whole area, but to make the principle clear we take the main axis to this complex which no one has ever seen. The proposal put forward here is that the new developments should start with the rediscovery of this axis and steer from it. It is a great, a monumental, lay-out as the air reveals; the great thing is to bring it down to the ground.

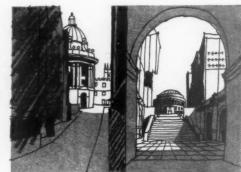
One might start by closing Imperial Institute Road with a wall so that street is turned into quad, or a series of quads. On the outside you are in Kensington—inside you are in a university. The insistence of perspective has given way to enclosure and with this comes a change, a change from progression in a straight line to an appraisal of the environment all round you. In this way the actual architecture ceases to be façade and becomes

sculpture, which the present Imperial Institute already is, though the surrounding development cancels out its effect. One could utilize part of this building, replanning the area behind so as to bring out the drama of the domes and towers and marry them with the modern architecture completing the new quads. It is chiefly a question of releasing potentialities which are already there.

Then comes the axis about half a mile long, picked up by dome, monument, tower and turret from the Albert Memorial to the Imperial Institute and wider beyond.

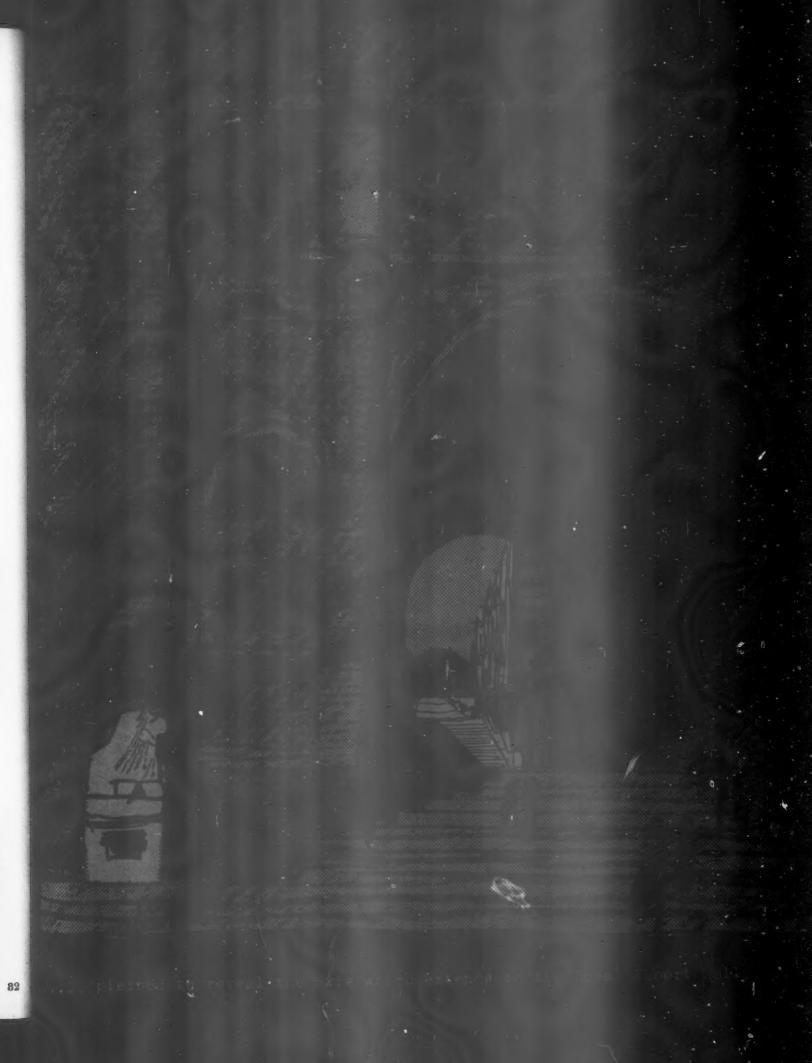
Yet as far as the pedestrian is concerned it might not be there at all. It is impenetrable, blocked, non-existent.

In a short study of the capabilities of the area, which is all that this article pretends to be, we stress this one point and show how the establishment of this axis as a reality for the pedestrian could completely alter the whole development. It would mobilise two of the largest man-made objects in London, the Albert Hall and the tower of the Imperial Institute, to the uses of the university as the Radcliffe and St. Mary's spire are mobilized at Oxford. Simply opening a line of vision between the two monuments would illuminate the very heart of the University: create a centre at the heart not the circumference, from which new developments could organically flow. And just in case anyone feels like saying absurd, let him before he does so remind himself that the buildings were planned and laid out with exactly this object.



Left, the Radcliffe at Oxford. Dominant and geometric it is revealed and unfolded as one moves through the streets, thus fulfilling its visual function as focal point. Right, the REVIEW'S proposal for utilizing the Albert Hall to the same end. At the moment this view is blocked by some \(\frac{1}{2}\) mile of solid building.



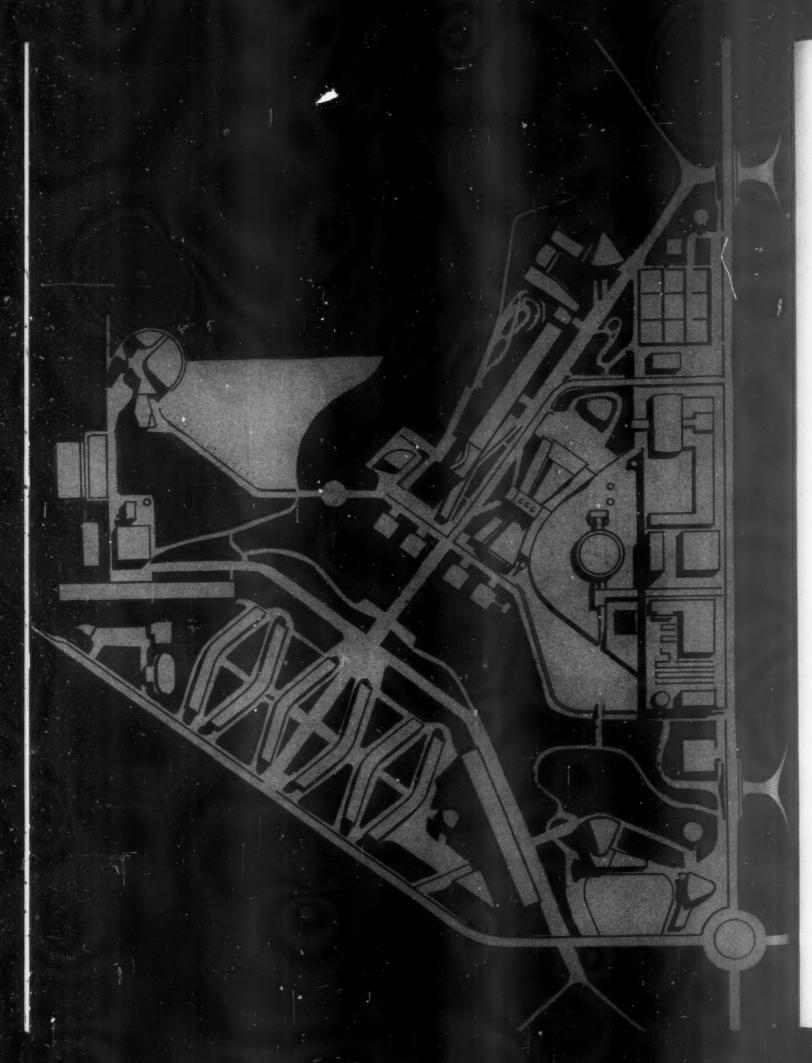




new flanking buildings dramatize the re-found axis .... looking back ...



to the Tower change of level emphasises the basic collegiate pattern.



The city centre for the new town of Peterlee is the empty climax of Lubetkin's career to date. For reasons beyond the control of the architect and his partners, it was never able to pass beyond the stage of private sketches, like that seen opposite , but the underlying intentions are clear — to create an unambiguous city core, classically defined by the three tall slab blocks, to create an urbanity that could embrace a straggle of wild nature as effectively as does the plan of Chandigarh. Such u comparison of the works and personalities of Lubetkin in London and Le Corbusier in Paris can be more than instructive, and it forms one of the hinges of Mr. Jordan's appraisal of Lubetkin which begins below.

BIOGRAPHY

R. Furneaux Jordan

# LUBETKIN

'The rootless cosmopolitan with hate foaming from his mouth'--the words are Zhdanov's; the hatred is of systems, organizations and academies, cliques and claques, hatred of men who 'get on' by smoking the right cigars in the right clubs. Lubetkin would insist that his work is the work of Tecton. He would insist, secondly, but more passionately, upon the intensity of his individualism, upon the dilemma of the radical who rejects anarchy, upon the masochistic delight of swimming against the current. And thereon he quotes Zhdanov.

Carlyle called Christopher Wren a gentleman. From Carlyle, when we remember the ungentle heroes of his hero-worship, that may have been a qualified compliment, a statement even of limitations. An artist, as Carlyle well knew, may be rather less than a gentleman, but simply must be much more. The 'something less' is mere Bohemianism; it is the 'something more' that makes the artist an odd and, sometimes, a persecuted figure in our society.

When the inner eye, like Ruskin's famous stork and swallow leaning upon the sirocco wind, views from afar all the crumbling cities of old Mediterranean peninsulas, then that merely gentlemanly phase is seen for what it is—a minor facet of a North Sea culture, as recent as the Restoration and now dead. But it does raise the question, tout court: what is Art? Is it no more than a cool and careful arrangement of spaces and proportions to a rule of taste; or is it—hand and intellect being mere tools—is it the sublimation through sensual form of the deepest sexual or religious passions. From the Lascaux caves to that

eternal quadrille danced by baroque saints beneath a dome in Prague, all history cries aloud that it is the second of these things. Each cathedral was an orgasm. And yet, somehow, that icy hand of taste fell, intent upon freezing art as a vested interest, not of that aristocracy which had basked in the warmth of baroque form, but rather of a new bourgeoisie bent upon petrifying form within the limits of its own inhibitions.

But the artist in society became a dangerous figure and only after two centuries made his reply-Blake's flaming invective against Sir Joshua. Omens of victory came only with the Salon des Réfusés of 1863 (Déjeuner sur l'herbe) and in England only with the Roger Fry Exhibition of 1910. So much for painting . . . architecture, more hopelessly enmeshed in the nature of patronage, had to wait a little longer. If the Modern Movement was a structural and aesthetic revolution, its historic role was to attack the system. It became a movement of the Left; forced to wait upon events, it became obsessed with them. Its response to Hitler, to Munich, to the Spanish War, to Unemployment and to all that, was an emotional response, also a correct one. But that, while possibly a birth pang of a new culture, did not by itself give us a new art form. The intellectuals of the 'thirtieswhat Betjeman might call the vieux jeux avant garde -deprived and indeed very willing to be deprived of their traditional milieu of Chippendale and porcelain, escaped hastily to the clean world of the new technocrat, to share in the Pyrrhic and Wellsian victory of nineteenth century materialism. With the very dirty bath water of 'style' they threw out the baby of philosophic understanding. Vers une Architecture was their handbook.

Lubetkin, while part of all this, was more profound. Unlike his English contemporaries he had learnt the history of art; unlike the Teutonic scholars he understood the deep emotional and dynamic values lying beneath the forms and facts. Lubetkin will dilate upon those opposite poles of baroque and classic, upon the violent storm music of the former as against the spaces and composure of the latter. Lubetkin will contrast the Place Vendôme as a baroque interior -minus its ceiling-with those vast spaces between Carrousel and the Etoile around which classic buildings, like milestones, demarcate not merely space but also a more epochal change from an architecture of the single masterpiece to an architecture involving the complex of the whole city. Lubetkin will explain the sempiternal nature of the dividing line between the Invalides of Hardouin-Mansart and the Panthéon of Soufflot. Lubetkin will illuminate the transformation wrought in Petersburg when Catherine the Great-untying, as it were, the baroque knotre-orientated those monuments at the fork of the Neva, depriving them of their inward-looking, incestuous, baroque relationship, and setting them instead to look outwards, classically, over the spaces of the River, thus converted the Neva itself into the Place de la Concorde of Russia . . . an imperial coup d'état based quite consciously upon a philosophy of art; something inconceivable in any other century.

To expand upon Lubetkin letting off any of these verbal fireworks could be a fascinating digression.

And not wholly a digression; it would point to the springs of his own visual imagination; it would also help to explain his place in the Modern Movement, or rather to explain his detachment from it, to explain his denial of the very existence of any such thing as a 'movement' qua movement. Architecture, for him, is bigger than that. Lubetkin can only be understood, and his work can only be understood, when one realizes that to the structure and form of twentieth century housing he would apply certain values acquired in Paris and Petersburg: baroque and classic values, but also-in his view-values of eternal validity. Moreover, he would say that he is not merely applying these values to structures in the modern idiom, he is also reconciling classic and baroque with each other.

It is a more imaginative and more profound attitude—as well as a more intellectual one—than can be found elsewhere in architecture today. Whether it is a possible attitude, whether it 'works,' whether it is flying in the face of history, whether it is—as at, say, Priory Green or Spa Green, Finsbury—producing good architecture . . . all those things may remain open questions. To dismiss it as formalism or 'pattern-making' is too shallow; one should at least respect any attempt to imbue Western architecture with qualities that might lift it above the trivial or witty which, for all its competence, are now its main characteristics.

London, for Lubetkin, was the end of a long journey—the rootless cosmopolitan in search of his freedom. Naturally he never found it; to this day London remains an approximation. It was a long journey for a Tiflis boy. He was the son of an admiral; Choisy, Bannister Fletcher and scholarly histories of painting were part of his childhood. His architectural education, such as it was, began in Moscow of the Revolution. It was all as exciting as that, and an aura of excitement hangs around him still. The journey to Warsaw in 1923 must have been a kind of flight, not to freedom, but from chaos to order, from a sort of Slavonic Schlamperei to a correctitude, an insistence upon status that was Prussianic. No place for Lubetkin.

And then, after a slightly fabulous interlude studying carpets in the museums of Vienna, came Paris. Paris, as the womb of Liberty, might perhaps be different from Warsaw. In a sense it was, though even a boy from Tiflis must have known that there is nothing in the world so unassailable as that carapace of French academicism... the right men in the right clubs! Not that Paris was without its dividends. They were rich dividends. There was the whole backcloth: Paris itself, classic and baroque, to be going on with. That was something that the Modern Movement had repudiated as part of a dead world; for Lubetkin it was a quarry, not of forms but of values and emotions. Paris also



brought the first jobswith J. Ginsberg—such as the apartment block (1927) at 25 Avenue de Versailles 1. It caused a storm. Although all that the word 'modern' then meant, 25 Avenue de Versailles is still a smooth and accomplished building, unmannered and dated here and there with only the ghost of an art nouveau touch. Typical of Lubetkin is his explanation of its strong horizontality, not in structural or functional terms but as a reflection of the passing traffic. It has worn well and still has a certain Parisian elegance which Lubetkin, one suspects, may have learnt to despise. Above all else in Paris was the Atelier Perret. Lubetkin, in the midst of admiration for his master, would say that he got much from him in the way of method, in the understanding of scale and proportion, very little in the

philosophy of art, a great deal in the philosophy of reinforced concrete. And it was that that he brought with him to London.

Le Corbusier in Paris, Lubetkin in London. To set them side by side may be offensive and obvious, also rather instructive. Both, being intelligent, accepted their inheritance from the 'pioneers'—the not unintelligent idea that a building might be fit for its purpose. They were, in what was then popular jargon, functionalists. Both, being intelligent, could apply that credo—or whatever one calls it—to the total form of the building and the city, rather than merely using it to make new details for a new style. It was a revolution; yet fundamentally it was only negative. It was where one went from there that mattered. Le Corbusier's work has been a development of

that credo; Lubetkin's a critical commentary upon it.

In some ways the Le Corbusier problem was simpler, and the impact—when it came—therefore more shattering. For 'Corb' the enemy beneath that carapace was so well defined. Against all the vieux pompiers of the Grand Manner in decay he had only to set the stripped precision of Hellenic and mechanised form . . . and there was Vers une Architecture and the Pavillon Suisse; against the squalid cities he had only to set his clear geometric and schematic reply . . . and there was Ville Radieuse. Beneath the carapace there was never a twitch, but then the carapace no longer mattered; Le Corbusier had become the god of all ateliers outside France. And now today, twenty-five years later, L'Unité has inspired another generation all over again. A most remarkable 'follow through.'

Remarkable, but not profound. Was it not a little too simple—this febrile, optimistic, Wellsian world, where two modulor men play tennis for ever and ever on a flat roof, and never think? The Lubetkin problem was, anyway, more subtle and more complicated, English society being more subtle, more complicated than French. French academicism, with its own logic, had enshrined and codified itself in institutions; English academicism had very little to do with the Academy or even with the RIBA, and it is an odd mark of Lubetkin's 'foreignness,' not that he rejected Professor Reilly's efforts to bring him into the RIBA, but that he thinks that Institute important enough to be worth annoying. English society-the 'system' -was not so simple as that; it was a more subtle, tangled muddle of many mutual admiration societies, including such things as the Academy, the Athenæum or the Arts Club, but mostly unnamed and even unaware of their own existence. This philistine bourgeoisie could have no art; its only architecture was an emasculated Suedoise. To an English Le Corbusier there would have been no response. That was the England where Lubetkin-still chasing his will o' the wisp nineteenth century radicalismarrived about 1930. To make an impact upon all that one had to build so as to hit the solar plexus. He did. Highpoint I was an orgasm.

using it to make new details for a new style. It was a revolution; yet fundamentally it was only negative. It was where one went from there that mattered. Le Corbusier's work has been a development of than a little unravelling. Godfrey Samuel came to the



rescue, bringing along five other AA boys to form Tecton. Later he brought together Tecton and the Zoo, the latter in the person of Peter Chalmers Mitchell. In addition to Samuel and Lubetkin there were Michael Dugdale, a rather amusing partner who withdrew early; Anthony Chitty; Val Harding whose death in the war was a disaster for English architecture; Lindsey Drake, who remained until in 1948 he joined Denys Lasdun, another pre-war partner, to build the Paddington scheme; and Freddie Skinner-still there, the one constant star. Douglas Bailey came in on the Peterlee episode, miraculously survived it, and is now the third partner in the present firm, the name Tecton having been dropped. No one, least of all Tecton itself, will ever sort out respective contributions, and if Tecton was meant to be a team—though a team with a captain—that is as it should be.

In the Paris of 1927 there was nothing happening beyond the fortifications that one could call architecture. Lubetkin, to whom the dynamic of space was all, hankered for those more open sites of outer London then ripe for flats and housing, jobs that might be realized in three dimensions. It was then—this move from Paris to London—not altogether unlike Palladio's move from Venice to Vicenza, an escape from the palaces of the Canal, with their single façades, to buildings with some outward expression of their volume.

It was a few years before the first of such sites—the brow of Highgate Hill-came Lubetkin's way; meanwhile the Zoo was an enjoyable and unexpected substitute. For young men with ideas there could hardly have been a more ideal field than the Zoo during the regime of Chalmers Mitchell and Huxley. A series of projects, each small and each ar isolated architectural concept on its own site; each with a stringent functional programme and yet each capable of light-hearted solution . . . almost a series of school projects plus an enlightened client. Again and again, moreover, these Zoo jobs enabled Lubetkin to exploit all the novel plastic potentialities of concrete. It is not a far cry from the Zoo to the church at Raincy; vet how far beyond Perret did Tecton and Ove Arup take this new and peculiar art of designing concrete. The most famous of the Zoo jobs is probably the Penguin Pool 13; carefully designed to meet penguinian acrobatics it ended up as a kind of Max Bill abstraction —the free and loose double spiral of the diving platform being firmly enclosed by the elliptical wall of the pool itself. This motif—the highly sculptural one of the free form within the rigid frame-was neither the invention nor the monopoly of Lubetkin, but he enjoyed it enough to use it again in the less known, but not less interesting, Penguin Pool at Dudley; above all, but for the last time, in the flowing plan of Highpoint I, ground-floor set beneath the geometric rigidity of the towers. It is fair to remember that only later did other people make it a cliché. and that with Lubetkin, as with Corb, it really does spring directly from function, that is from the need to free and differentiate the ground-floor of an apartment block from the standardized upper floors.

Just because the Zoo buildings were so complex, they do perhaps tend to be strained or over-designed. In such frivolous concepts that may not matter, but Lubetkin—with all his emotional response to form—does design, as they say, 'at the top of the voice.' If it is a fault it is one that is born of a heightened imagination. It is the opposite of insipidity; it is virility.

These buildings at Huxley's Zoo1, plus a nice bit of sharawaggi at Dudley, were a curtain raiser to Highpoint. Highpoint I (1934), 4, had almost everything. Lubetkin would disagree, insisting that it was no more than a bit of juvenilia . . . and that even Highpoint II (1937), 8 and 9, was only adolescence. He would say that Highpoint I was arid, schematic, the barest functionalism, a merely sculptural upward projection of a plan. He would not deny, however, that there was in those years of frustration, the years of the Goodhart-Rendel regime at the AA, a generation of young English architects to whom Highpoint I mattered. It mattered to them because 'even the slightly zooish flippancy of some of its details was unimportant beside the clarity of the building—a clarity that was both real and sculptural.'2 It mattered because it proclaimed that their modernism really was a structural revolution, not just a style; it mattered if only as a symbol that their Modern Movement could be a reality, not a mere protest. To visit Highgate, instead of reading French, was at least an encouragement.

It mattered, of course, in other ways. It was the first of the point blocks. It was not a Ville Radieuse—for we had not yet got around to building new towns—but it could have been a unit in a Ville Radieuse. It took account of a social problem, land and population, as did no other building of its time. The flats were meant to be enjoyed—all sunlight, sky and freedom—and were all let before the job was finished. Le Corbusier could write:—

'The building is large enough to be an example, a proof. The ground-floor here extends like the superb surface of a lake, absorbing easily the lines of traffic. . . . These flats possess the most important factor of all domestic architecture: sun, space and intimacy. The building at Highgate is an achievement of the first rank, and a milestone that will be useful to everybody.'3

One glance at, say, the LCC Ackroyden Estate (1954) shows this statement to be correct.

If, to that generation, Highpoint mattered at the time not less than the Pavillon Suisse, they might add now that the tragedy of Lubetkin is the absence of the 'follow through'—that very remarkable 'follow through' for Corb's from Pavilion Suisse to L'Unité. They might say that the Tecton work of to-day, while having its own more obscure qualities, is emphatically not L'Unité and, even more, relevantly, is not Highpoint I. They would be wrong, partly for confusing criticism with their own nostalgia, partly for failing to recognize the real effort by Lubetkin to put into his recent work those classic and baroque values—values not forms—that are the mainspring of his imagination. He, on his side, would be wrong in failing to recognize what, perhaps, he never knew,

<sup>&</sup>lt;sup>1</sup> The condition of these Zoo buildings to-day is a scandalous reflection upon the present regime at Regent's Park; it also invalidates any comment upon a colour treatment that has long since disappeared.

<sup>&</sup>lt;sup>2</sup> Anthony Cox in Focus 2. Winter, 1938.

<sup>&</sup>lt;sup>3</sup> Le Corbusier in the abchitectural review, January, 1936.

that twenty years ago he gave to the Modern Movement in England, with all its curious Domestic, Romantic and Quaker origins, just that warmth, glamour and guts, the absence of which had made it so 'odd' and so insular. To dine out at Highpoint I, to arrive past the caryatids of Highpoint II just when the dark foliage is catching the lights, is still an architectural experience. For an Englishman it is, very nearly, to recapture some half-forgotten evening in some indefinable south; it is—as Henry James might have put it—'to be so ineffably "abroad".' But then glamour too, not less than sensual form and functional fitness, is part of an architecture.

Between Highpoint I and Highpoint II were three years; there was also a gap of six feet. Lubetkin would say that this gap is symbolic-symbolic of many things both in the external world of the Hitlerian jungle and the internal world of his own development. He would claim, one suspects, that the 'forward from functionalism' boys, in choosing the gay, brittle road that led to Domus and Brazil, failed to express their own social crisis, while he at least acknowledged the gathering mysteries and shadows, through an architecture which, while seeming to withdraw from life like some Buddha or Sphinx, did so only to look down upon it in serene comprehension. To the Anglo-Saxon this is Slavonic mysticism taken to the point of fantasy; for Lubetkin it was a conviction, almost a catharsis. Being an architect's catharsis it changed the London skyline.

Catharsis . . . or the beginning of decline? Lubetkin, fierce individualist, probably doesn't care. He had after all—it was one evening at the Zoo, with Wells-Coates and Connell-helped to found MARS, given it very material help and then, feeling it to be just one more 'club', resigned. He has detached himself from the Modern Movement and thinks that it is—if it exists at all—only clever-clever variations by the 'club' upon the theme of old clichés. So, decline, catharsis, self-isolation . . . it hardly mattered when, into Highpoint II sixteen years ago or into Holford Square today, one had to put those indefinable things—storm music, space dynamic, repose—that Mansart or Gabriel had put into very different

monuments ages ago.

It was magnificent, but it was not architecture. One cannot with impunity defy one's gods. Taking account of life and techniques, it was more noble than stylistic revival but doomed to the same cul-de-sac. The values of a Mansart or a Gabriel may mean everything to a Lubetkin . . . in private; he can never share them with twentieth century man. Highpoint II was technically an advance upon Highpoint I-in fact a technical triumph—but whereas 'Highpoint I stands on tip-toe and spreads its wings; Highpoint II sits back on its haunches like Buddha'—the Buddha that squats, not the serene, comprehending Buddha of the architect's intention. It might all be a move 'forward from functionalism,' but only to formalism. It was more than a deviation of appearance, it was a deviation of aim. Anthony Cox, in his Focus article, stated the case when he wrote:-

It (Highpoint II) is more than an adjustment within legitimate limits; it is prepared to set certain formal values above use-values. . . . As I see it there

are limits of intention by which certain aspects of the vast concept "building" are emphasized in relation to the long-term development of modern architecture in an industrial economy . . . If these limits of intention are changed, rather than extended (and in the case of Tecton it seems they are changed), it should follow that a point has been reached at which external material conditions affecting architecture have made such a change necessary and appropriate. If this point has been reached, and I cannot see that it has, the change in aim must be due to personal reasons, to a turning inwards towards private formal meanings which have no generally recognizable social basis. Is it really an important move forward from functionalism, from which development is possible; or is it a symptom of decline, an end in itself?'

The same article admits that to speak of 'legitimate limits,' 'use-values' and so on, is to beg a lot of questions about the nature of modern architecture. Nevertheless, here is a young architect already, in 1938, much concerned with formalistic deviationism within the Movement. Highpoint II seemed almost a betrayal. Highpoint II was a reversal of Highpoint I, L'Unité a development of Pavillon Suisse. Highpoint II was not, however, a betrayal merely because it went beyond the limits set by 'use-values'-'use-values' themselves being indefinable—but rather because the nature of the infringement involved private meanings as incomprehensible to the 'club' as to the man in the street—no doubt a profound and brilliant language of the emotions, but nevertheless a private one in which Mansart and Lubetkin talk to each other across time. Perhaps Lubetkin thinks of it as some universal esperanto; perhaps he thinks that a building in the street may be as private as a painting in the studio; perhaps he is content that only the dead and himself shall understand.

Examine, for example, the Finsbury Health Centre (1938), 10. This building, while just a little later than Highpoint II, would seem in fact to show a transition in Lubetkin's development. Like Highpoint I it spreads its wings; it spreads them with a fine clarity that is a foil to the richer complexity of the central block from which, indeed, they are almost detached. It is an albatross of a building. Here, between the wings and the central block, is an early use of the 'loose link,' justified not as a cliché but as something derived from the contrasted architecture of the things linked; that architecture, in turn, being derived

from 'use-value.'

Nearly all the forms of the Health Centre do in fact spring from use. The programme was stringent, but the solution almost as 'functional' as any 1938 purist could wish for. And yet . . . examine that central block: things are happening, strange convolu-tions and interplay of forms. The private language is at work. There is, for example, an intermediate area, a kind of terrace, above the entrance but below the lecture hall roof that is-esthetically-common to both. Like the upper storey of Les Invalides it belongs' equally to the façade below and to the dome above; the eye can flick it up or down at will, making it part of either; it is the opposite of the ruled horizontality of Highpoint I. Baroque movement is playing like a beam over an otherwise functional façade. It does not displease, it merely lacks its full flavour until the cook explains. Real baroque flavours get through to us because the 'punctuation' of the baroque vocabulary emphasizes them. Moreover we read them knowing the idiom will not be our own and this adds the indefinable piquancy of historical sentiment. Modern architecture can get through to us only in our own language. True, to an eighteenth century mind it may not have much to say, but the little there is should at least be comprehensible to the sort of people who use the building.

Lubetkin, needless to say, would disagree and has his own explanation of the 'private language,' of this baroque basis for modern building—this formalism both of Highpoint II and of his more recent work. With the Cartesian dualism that entered seventeenth century society the old domination of the Church was broken; Mind and Matter came under separate authorities, thus opening the way not only for the scientist but for specialization as such. The single masterpiece of the classic, as opposed to the unity of a baroque group, symbolized this specialization, this fragmentation of the monistic baroque world, until we end with the architecture of capitalism, the architecture that says to the common man—'Keep Out!'

One cannot return to a baroque world any more than to a baroque art. Can one—and this is the question posed by Lubetkin—restore that communion between building and onlooker? Can one make the large housing block a single object, a tromp d'oeil—as, say, was Les Invalides—and thus set up in the passer-by an emotion or at least a reaction—for even bewilderment is reaction of a sort.4

But of course the world beyond one's building remains the same chaos of fragmentation. And so one isolates one's own statement... one is not resigned to this, it is an interim necessity. The blank end wall, the shadowed base (whether achieved by piloti or otherwise) and the penthouse under the flat roof—all these combine to isolate and to frame in that inward-outward looking façade that is to set up that reaction in the passer-by.

If we had an 'integrated society' then our building could respond to and look towards other buildings—

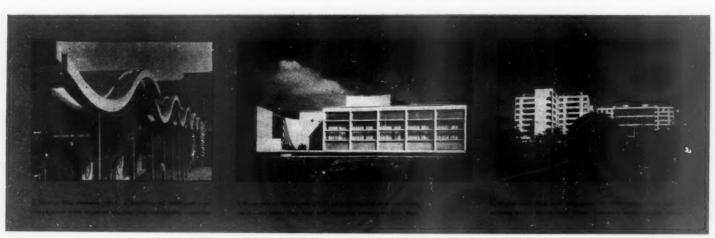
baroque-wise. Meanwhile the architect must make his own statement, an aesthetic statement but also a social protest.

This analysis of how—at Highpoint II in 1937—formalism entered like a bacillus into the bloodstream of modern architecture, makes unnecessary any full analysis of Tecton's post-war housing. That Gestetner owners of Highpoint and typical glamour client of the 'thirties—should be replaced by the Borough of Finsbury is normal. That, at any rate, means that the tragi-comic story of getting Highpoint II past the local authority won't happen again.

The formalist controversy today is not very different from sixteen years ago, although three new elements may be said to have entered the arena. One, the conceptual building; two, façade patterning and, three, social realism.5 The main stream—the Modern Movement-has advanced, at least in theory, beyond the mere upward projection of a plan in terms of functionalist elements. The building itself must now state, in a single coup d'oeil, the 'idea' underlying it; it must be a concept capable, like, say, a mediæval cathedral or a Farnsworth House, of being visually grasped and enjoyed, fondled almost, as if it were a Ming pot. Is this an advance? Does this conceptual building now invalidate the very intention of formalism, of the private language, of saying something that 'arid functionalism' could never say? Has the Modern Movement, in its Mies phase, now found its own answer in its own terms to the problem Lubetkin tried to solve so long ago?

Formalism, on the other hand, faced with the terrific problem of humanizing groups of vast<sup>6</sup> slab blocks, has meanwhile added to its vocabulary. That baroque beam still plays over Spa Green (Rosebery Avenue), 11, and Priory Green, 12; upper stories and penthouse still ingeniously recede, shadows still ingeniously detach the building from the ground; there is still the nod across the centuries. That is just a carry-over from Highpoint II and the Health Centre into our own era—an era wherein the strictest economies have robbed these baroque values of the

<sup>6 &#</sup>x27;Terrific,' 'vast'? London, as seen on a clear day from the Senate House tower shows that the new housing of the inner boroughs—a fair proportion of it Lubetkin's—is changing the skyline more than any equivalent event in our architectural history. The Gothic Revival (Westminster, St. Pancras, South Kensington, etc.) is the only rival.



<sup>&</sup>lt;sup>4</sup> The autocratic basis of baroque in no way excludes this communion with the onlooker; with its outward drive into avenues and public spaces it demands a reaction. The reaction demanded may be 'awe,' but, unlike Capitalist architecture, baroque does not exclude the onlooker.

<sup>&</sup>lt;sup>5</sup> The 'new brutalism' is not a fourth element—only a conceptual building in a private language. Lubetkin talks across time to the great masters; the Smithsons talk only to each other.

suavity and finish without which the whole thing becomes almost nonsense—misplaced sophistication.

In any case this interplay of masses on large buildings could not be enough; classic had to come to the rescue of baroque, with its façade treatments, its scale-giving elements, its divisions and subdivisions. Windows, panels between windows and brickwork below, all come into play—like entablatures and orders—to make of the façade an all-over pattern . . . like a carpet in a museum in Vienna.7 Less important than the criticism that—as at Bishops Bridge Roads for instance—the pattern forces the window into the corner of the room, is the fact that this is not, not here and now, a viable architecture. Lubetkin would reply that Family Smith, Family Jones, etc., are each given their due expression, their own unit of the pattern within the containing frame of the building. This is not strictly true. It was not, moreover, a form of self-expression for which the wealthier and more individualistic tenants of Highpoint had ever hankered unduly; they were content, like aristocracy in terrace housing at Bath or Nancy, to live in an architecture of distinction.

That third new element in the arena—social realism—is irrelevant here except that by analogy, or by antithesis rather, it points to the sophistication and difficulty of formalism. For that abstruse language it would substitute catchy tunes, marching songs and folk tales. After great revolutions and national wars there comes eventually a moment when liberation and victory give vent to an architecture. That is the moment when the classic dynamic of space takes over from the baroque, when the Crillon, Chambre des Députés and the rest become points of demarcation around an area. It is the space, not the building, that proclaims the nation. That is the moment when even bad buildings serve to set off, as it were, the incredible spaces and flights of steps in the new Stalingrad. That dynamic of space is one thing, the architecture is another. That the western baroque chosen by Peter the Great for his new westernised capital upon the Gulf of Finland should be the basis of a modern revival is explicable but, at least to a

'modern' mind, odd. It is perverse, not only socially and technically, but æsthetically, since an architecture of rich textural surfaces is lost in space—destroyed by its own foreground. Baroque qualities that are admirable inside the Place Vendôme would be wasted on the Champs Elysées. The calm classicism of the white cliff that is the Rue de Rivoli, the grouping of separate buildings leading on from space to space—as Gabriel leads one on from the Quai d'Orsay to the Madeleine—that, or rather its equivalent in a technically modern idiom, was the answer to the great spaces of Russia's new cities.

This is not a digression. It points the error both of social realism and of formalism. Social realism, in its anxiety to find a popular language, revives a stylebaroque—that was intended for quite different social purposes and for quite different spaces-for piazzas, courtyards and little German parks.9 Formalism makes the opposite error. Lubetkin understands æsthetic values and spatial relationships and handles them with superb facility and erudition; he cannot interpret them through a generally comprehensible architecture. It is all rather sad. Social realism and formalism are heresies against the 'Modern Movement'—as seen by, say, CIAM—and in intention at least, both are nobler than the catholicism they offend. Both, while prepared to grant the merits of English legislation, Italian craftsmanship, Scandinavian detail, and so on-do, more and more, find that Modern Movement nervous, bright, papery and fundamentally trivial—which indeed it is.

One day the tragic story of Peterlee may be told. Whatever else the plan did or did not do, it did not make the primary blunder that will haunt the other New Towns for years. It did not fail to make an unambiguous centre and to make it at the start. It did not regard that centre as a mere market-place group of communal and commercial buildings; it conceived it in strong architectural terms. At the centre of Peterlee were to be three very high buildings—not an undue proportion of high against low for the town as a whole—and these three towers were to be disposed at the points of a triangle—i.e., classically—demarcating space with such clarity that market groups, cinemas and all the rest of it would inevitably,

<sup>9</sup> The buildings of the Ring in Vienna are also classical milestones demarcating great areas, and yet are often baroque. Each, however, while playing its part in the spatial conception is, on approach, found to have its own immediate baroque setting. Vienna is an interplay of the two scales.

This big Paddington scheme began in the Tecton office, its lay-out taking shape there. It has been executed and developed by Lasdun and Drake in a manner which, superficially at least, would seem in its breezy self-assertion, to be rather more Lubetkin than Lubetkin.



<sup>&</sup>lt;sup>7</sup> It is significant that Lutyens, in his tenement blocks for the Westminster Estate, arrived at a comparable patterning. He was en route from baroque style, Lubetkin en route from baroque values.

because naturally, be born between and beneath them. The outer rings of the tree trunk would then form themselves later, in the right order. If England had emerged from war in a more triumphant or self-confident mood, the bureaucratic scandal of Peterlee might have been overcome and one new town at least would have had a true dynamic born of architecture conceived spatially. The concept was accepted at the highest level in the country; it was only lesser fry who first muddled and then postponed it to the Greek Kalends, and all in favour of pink cottages beyond the true Peterlee boundary. Lubetkin and Bailey resigned. They had been commissioned to design the town, not to murder it.

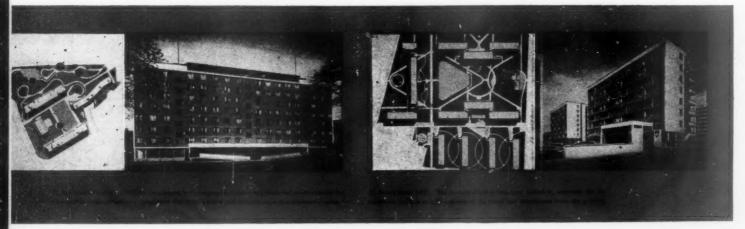
When Lubetkin says of the Peterlee plan that, in the sense that its three key buildings demarcate space, it is a 'classical' concept; or of Priory Green that, in the sense that its patterned façades look inwards to enclose space, it is a 'baroque' concept, he may seem far-fetched. But he means it. It is, admittedly, a nostalgic statement, the statement of an emotional being reading into the rather humdrum architecture of today, dreams peopled with ghosts from the Neva, the Danube and the Seine. It is, admittedly, an attempt to rationalize in the form of an architectural theory, the products of a deep imagination. That does not invalidate it. This passionate feeling for space, the dynamic of space, the definition of space, the architecture of space, is the golden thread running through Lubetkin's career. Going beyond current arguments about formalism and the rest, it may not set Lubetkin above his colleagues, but it does differentiate him. It explains his genesis as an architect; it explains the move to London; it explains the sculptural nature of the Zoo projects; it explains the exploitation of the brow of Highgate Hill; it explains the post-war planning; and it explains Peterlee.

He is a technician—Highpoint II set a new standard in its own field, and so did the Health Centre. And he is a decorator. His own Penthouse at Highpoint, 9, speaks for itself, but even there the throwing forward, as it were, of the room towards the long window and panoramic view, is a spatial thing far more important than the ephemeral decor.

Individualism, imagination, humility and artistic

erudition make a curious amalgam. To link such strands of character with the ultimate product-in this case an architecture—is the fascination of all biography. In the 'thirties it was individualism, whether of the Left or the Right, whether of a Lubetkin or, say, of a Baker, Cooper or Blomfield, that held the stage. The Modern Movement in England was as much an affair of individuals as was the academicism of the Right . . . and had been ever since the Red House. So Lubetkin, at that time, had found almost what he was looking for. In the post-war world where men sink their individualism in organizations—organizations such as Hertfordshire or the LCC-to produce good architecture . . . can there be a place for the Lubetkins? There must always be a place for the artist and technician, but to 'belong,' to be on the band-wagon, is the eternal problem of the Leftist who has seen his dreams come almost true. It is why, sometimes, old revolutionaries disappear.

Are individualism and humility a contradiction? The humility of the artist is humility in face of his art . . . not self-effacement. Turner, with all those big blazing canvases, could steal any show anywhere; before the god of sunsets he was prostrate with humility. When Lubetkin, in 1935, designed a building to steal the show there was no arrogance, no réclame; it was a three-dimensional statement about structure and life, an honest and therefore humble statement about convictions honestly held. When the author of this article was Principal of the AA School he heard many criticisms of students; most of them cancelled each other out; Lubetkin's comment went homethat too many students designed to their own glory. There are, however, others besides students; to seek applause from the 'right people' for the wrong reasons, to rob one's work of real architectural content, only to fill the vacuum with nice sentiment, is the quintessence of conceit . . . an assurance of architectural death since there is no architecture to live. Lubetkin's work—specially in recent years—is often bewildering and as difficult to understand as are his own explanations; sometimes it is self-assertive or even over-designed. It is never guilty, however, of prettiness, triviality or nice sentiment; it is on the contrary packed with very real architectural content, and is thus assured of survival.



# current architecture recent buildings of interest briefly illustrated.



1, the west side of the factory, with the boiler house.

# FACTORY AT STEVENAGE NEW TOWN

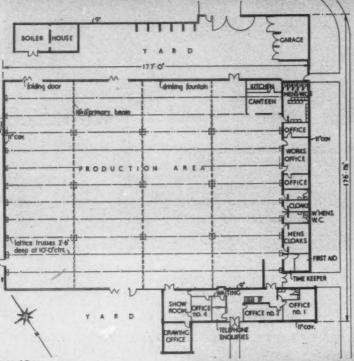
ARCHITECTS' DEPT., STEVENAGE DEVELOPMENT CORPORATION

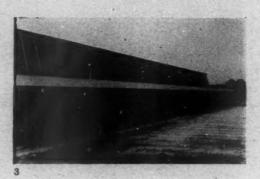
This is the first factory designed by the Development Corporation since steel became derestricted, and was developed as a prototype for factories for light engineering work. The use of prefabricated components for the production area made for very rapid erection, 2 months ahead of the traditionally constructed offices, allowing prior installation of machinery and services, so as to start production as soon as the offices were occupied. The factory the railway west of the Great North Road.

16-inch by 6-inch primary beams and welded steel fire division wall.

lattice secondary beams is the load-bearing element for the production area; 11 inch cavity brickwork supporting precast, prestressed concrete floor and roof for the two-storey office block. The south wall is of unfenestrated brickwork, with brick piers. This brickwork and that below sill level throughout the production area is non-load-bearing; above sill level, except on the south, is cladding. Outer walls of office blocks are of loadbearing brickwork and non-loadproduces tube-bending machinery; It is sited near bearing panels. Upper walls and ceiling of production area are lined with 1-inch insulation board. Pro-R.S.J. or welded steel box stanchions carrying duction area and office block are separated by a 9-inch







2, inside the production area, before the machinery was installed. 3, the northlight and clerestory light on the north wall of the production area. 4, the garages from the receiving yard.







# LABORATORIES AT RICHMOND

## ARCHITECT: KENNETH ANNS

These laboratories in Lower Mortlake Road, Richmond, contain electronic equipment and therefore no plans may be shown. The six-storey block is steel framed, external walls having an outer skin of pre-cast concrete slabs, faced with an exposed Derbyshire spar aggregate, criggion granite or faience slabs. Behind this cladding is an inner skin of 'No-fines' semi-cellular concrete, plastered direct internally. Internal partitions are of breeze blocks. Floor finishes are in thermoplastic tiles for the laboratories and wood block for the offices. Radiator heating and hot water supply are served by similar cast-iron sectional boilers; electrical installations include flood-lighting, loudspeaker system and a smoke detection system for fire prevention.

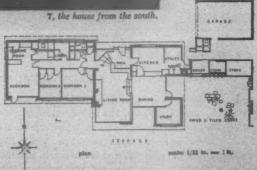




# HOUSE AT TOTTERIDGE, HERTS

# ARCHITECTS: GREENWOOD AND MICHELL

This house in Totteridge Lane was sited in mature grounds sloping southwards. External walls are of cavity load-bearing construction, faced with bricks of mixed textures, and elsewhere with glazed tiles, vertical cedar-boarding and onyx marbles. All main rooms are double glazed. The whole house is floor-heated by coils over wood-wool slabs, covered with 3½-inch screeded concrete.



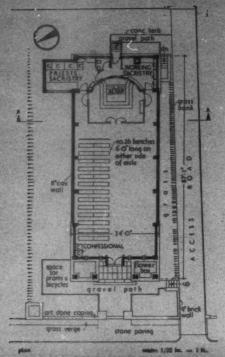


8, the north-east front

# CHURCH AT SIDLEY, SUSSEX

ARCHITECT: A. F. WATSON

The entrance front of this Roman Catholic church in Southlands Road, Sidley (a suburb of Bexhill), has columns of reinforced brickwork carrying a r.c. cranked beam supporting the porch roof. The apse at the S.W. end has stud partitions, finished with plaster on expanded metal-lathing. Side wells are of cavity load-bearing construction with brick piers between windows.





9, the interior from the chancel.

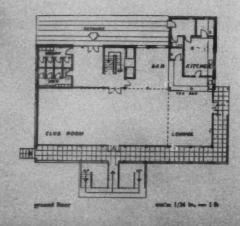


10, the verandah from the north.

## SPORTS PAVILION AT BARNET

ARCHITECT: D. H. GILLIES-REYBURN

The site of Finsbury Sports Centre at Barnet is a half-hour's motor ride from Finsbury, but was the nearest available. The building has r.c. frame, retaining walls and changing cubicles in the basement. Where exposed the frame is rendered and coloured, and where not exposed faced with yellow flint-lime brick. Infilling is chiefly of glass, brick or breeze panels. The club room, the main feature of the plan, occupies two floors, with open verandah, games room, offices and caretaker's flat grouped around it on the first floor.







[It has not been part of the policy of THE ARCHITECTURAL REVIEW to publish 'leaders' or to provide its editors with the opportunity to air their opinions, suggestions and/or grievances—other than in full-dress articles. This column is provided so that they shall henceforth have that opportunity, each note being signed to show that it is the responsibility of that particular editor and none other.]

## ARCHITECTURE AT THE R.A.

Each year, when the Royal Academy summer exhibition\* comes round again we we are reminded of the confusion of purpose that reigns in the Architectural Room. This year efforts have clearly been made to invigorate its contents and the best way we can welcome them is by examining seriously what is wrong with the basis on which they are chosen, instead, as we have been inclined to do recently, of deciding that the exhibition is so unimportant that it does not matter one way or another.

The confusion can only be resolved by redefining the purpose of the Architectural Room. Is it to exhibit architecture, just as the other rooms exhibit painting and sculpture? If so, seeing that buildings cannot themselves be brought inside Burlington House, what is required is the most factual representation possible: photographs of completed buildings, supplemented by sketch plans to show how they work. In practice, however, most of the exhibits are projects—though not all; a few are completed buildings that are nevertheless illustrated by the kind of fanciful perspective drawing that is made to impress clients before the building itself exists. Leaving this absurd practice—which offers us the worst of both worlds-on one side, let us consider the case, which undoubtedly exists, for an exhibition of architectural projects; that is, of representations of buildings not yet built.

Projects give a more up-to-date picture of the state of architecture by depicting what is in architects' minds now, whereas illustrations of completed buildings show what they were thinking several years ago. Perhaps more important, an exhibition of projects can serve as a shop window in which the public can see what buildings

are being planned for its use and admiration. It can thus help to create an informed public opinion about architecture, which is always being discouraged by the discovery that the buildings it would be only too ready to criticize are an accomplished fact by the time it sees what they look like.

If the purpose is to exhibit projects, it is important, however, that they should be real projects: buildings that are actually going to be put up. At present there is no means of telling which drawings on the walls of the Architectural Room represent such buildings and which mere architects' fancies. Few would want to exclude exhibits like those moving neo-Victorian exercises that Mr. Raymond Erith has contributed in recent years, but the place for these surely, exquisitely drawn as they are, is in the water-colour rooms at the other end of the galleries. They are works of draughtsmanship in their own right.

In proposing the exclusion of architects' fancies from the Architectural Room one must not forget the valuable part these have played in past times. Vanbrugh, Hawksmoor, the Adam brothers, Soane and many others developed their ideas and strengthened their architectural vocabularies by producing designs for palaces and parliament houses that they can hardly have imagined were likely to be built. This kind of fantasy, based on an accepted idiom and devised irrespective of site or schedule of accommodation or structure, is not perhaps relevant to the way modern architecture evolves, nor does it foster the qualities modern architecture is seeking. Yet rather than discourage far-reaching thought and imagination, a corner should perhaps be set aside for theoretical exercises of this kind, clearly separated from the illustration of real buildings.

These would provide a splendid foil to an exhibition of photographs of completed buildings to which the Royal Academy might usefully decide to restrict the exhibition in future, in spite of the arguments in favour of projects given above. If they were to so restrict it, the exhibits should consist only of photographs, plans and models, except in the 'visionaries' corner' just proposed. The greatest weakness of the present arrangement is the undifferentiated mixture of architects' achievements, proposals and hopes. There have even been instances in recent years of the submission-and acceptance-of designs that have been entered

for, and failed to win, public architectural competitions, with no indication of their origin given.

To change the Architectural Room into a factual record of real buildings would be refreshing and stimulating and bring the exhibition into closer contact with the practice of architecture. If, on the other hand, it is to remain an exhibition of projects (it should be one or the other), one final plea must be made: that the projects should be shown either by models, by impersonal geometrical drawings or by sketches by the hand of the architect responsible. To visualize a project on the basis of the designer's own drawings is difficult enough. To visualize it when it is interpreted by a third party and presented by him in a highly stylized drawing such as the hired perspectivist usually produces is even more difficult. As works of art most of these are valueless, and besides this, an irrelevant similarity of style is often given to several dissimilar designs by the draughtsman's highly individual style of presentation. This ringing of the changes on a small number of perspective draughtsmen while the architect, the real author, one supposes, of whatever æsthetic qualities the building possesses, takes a back seat, has lately become absurd. In this year's Architectural Room, of 135 drawings exhibited no fewer than 15 are by Mr. J. D. M. Harvey, 13 by Mr. Lawrence Wright and 10 by Mr. E. J. Thring. Not more than perhaps half a dozen architects have drawn their own buildings.

J. M. Richards

BOOKS

## MISINFORMED REFORM

FORM AND REFORM IN ARCHITECTURE. By Bertram Hume. Halcyon Press Ltd., London. 15s.

The avowed aims of this book are exciting; 'an account of the various theories of design put forward during the last hundred years' arriving at 'an estimate of the present position.' Mr. Hume's performance, however, does not rise to the task. To the fashionably middle-aged its appeal will be oblique, and therefore satisfying; but to a harsh younger generation it has the too-familiar voice of the deserter, the exile returning to rake a thin layer of 'ifs' and 'buts' and 'howevers' over the nasty cracks that an earthquake left. Under the banner of a 'rappel a l'ordre' the attempt

at fairmindedness has here achieved no more than indecision.

The selection of progenitors of the modern movement 'since the power-driven machine began to exert its influence on society' is confessedly insular; Pugin, Ruskin, Webb, Geddes and Ebenezer Howard are a mousy team to set against Pevsner's Pioneers. No mention of Art Nouveau, Loos or Mackintosh; of the Moderns, no mention of the Bauhaus, Die Stijl, the Scuola di Como, the Americans; two sentences on the Futurists. The desire for generality and brevity might have excused such specific historical omissions were it not that the one Modern who is discussed. Le Corbusier, is treated in a manner uniquely misinformed. 'The influence of classic ideas' are apparently 'never acknowledged and do not derive in any sense from his theories'; guilty of a 'neglect of plan,' his primary interest is in 'technology' and yet, perversely, 'the principal aesthetic characteristic of his architecture . . . is picturesque.' It is hard to frame a protest against criticism of this sort which is apparently based upon a refusal to consult the texts and the buildings under discussion. That it gains in originality by what it lacks in accuracy is not greatly to its credit.

The central portion of the book is devoted to an abstract discussion on the academic dichotomy 'Classic v. Romantic'; one can still occasionally get some fire by rubbing together these dry sticks, but not at the tempo of 'symmetry and convenience are one and the same thing.' This is, however, the best portion of the book; it does state a need and does in retrospect give some coherence to the earlier criticisms of Pugin, Ruskin and current English town-planning. When it becomes transformed into 'Aristocratic v. Communist' obscurity returns. (The Communism is of a rare vintage—Berlin 1920 perhaps with an unspecific dash of Bauhaus?)

The themes of this book are tremendous, and surely need to be analysed but not, to use the author's own prose, by 'people who, as is not unusual in such cases, understand only very imperfectly with what they are dealing.'

## VOL. FIVE-AND VICTORY

LE CORBUSIER: OEUVRE COMPLÈTE 1946-1952. Editions Girsberger, Zurich, 1953. £4 4s.

The fifth volume of the 'Oeuvre Complète' marks twenty-five years of Le Corbusier as prophet, poet, manifesto writer and master of the esquisse. Seldom has printed page worked so thorough a transformation in the vision of its beholders as have these five volumes. But what makes this one so fitting a milestone is the presence in it of the twin victories, Chandigarh and the Unité d'Habitation at Marseilles. After all the projects abandoned or never taken up, the buildings half-built or too soon deserted, the death or defection of clients, the duplicity of politicians, the inertia of committees, the bankruptcies of contractors, now the smoke of battle clears and there, gleamingly triumphant, stands Europe's only architectural master-work of the twentieth century to date, the Unité d'Habitation and, promising even greater triumph, the new

India's first experiment as major art patron, Chandigarh, capital of East Punjab.

For the record of these alone (though Chandigarh is only illustrated in project form) the book is worth possessing. Of the rest there is the millinery factory at St. Dié-sole outcome of the rejected town plan of 1945-a post-war report on Le Corbusier's own flat, in the description of which he declares experience to have shown him 'that certain materials are the friends of man. These are stone, wood, terra-cotta and white chalk or white plaster, while nickelled and chromed metals, polished and brilliant, can only be used in very special circumstances'-a far cry this from futurism and the machine aesthetic. The story of the UN Building is told, including the fascinating but so far unsolved mystery of the missing sketch-book 'disparu pendant deux années du coffre-fort de l'institut de Boston.' There are schemes for Marseilles, Strasbourg, Cap Martin, for an exciting house of ingenious section at La Plata, for the chapel at Ronchamp, for demountable exhibition buildings, and for the new Unité d'Habitation at Nantes-Rezé. The latter, similar in principle to Marseilles but of different construction, was commissioned by the future occupants, labourers and foremen, the majority of whom are employed at the nearby

This book, then (in company with its companion volumes), is an expensive necessity for every architect's bookshelf. Without it many hours must be spent in reference libraries; for such is the subtlety and inventiveness of Le Corbusier's imagination that his secrets are not all yielded at a glance.

Ian McCallum

# Shorter Notices

MEDIAEVAL CARVINGS IN EXETER CATHEDRAL. By C. J. P. Cave, Penguin Books, 4s, 6d.

King Penguins are following Dr. Pevsner's Leaves of Southwell and Mr. Tanner's Unknown Westminster Abbey with a volume on the corbels and bosses of Exeter Cathedral. Is this the beginning of a series within the series? It would be an excellent venture, but can such books ever be as popular in this country as Ducks or Lilies or Heraldry? The illustrations are from photographs by the late C. J. P. Cave, miraculously clear and telling considering the distance from the camera at which they had to be photographed. The corbels and bosses run from c. 1275 to c. 1350. The quality is highest at the beginning and end. In between there is more curious than competent carving. Mr. Cave chiefly discusses the meaning of the subjects represented. A note of a few pages is added by Dr. Pevsner to place the sculpture in its historical context and divide it up between various hands—a hazardous undertaking.

# Books Received

THE ART & ANTIQUE RESTORERS HANDBOOK, George Savage. Rockliff Publishing Corpn. 15s.
SACRED EDIFICE. John Glosg. Cassell. 8s. 6d.
AHISTORY OF THE SCHOOL OF ARCHITECTURE, COLUMBIA UNIVERSITY. T. K. Rohdenburg. Columbia University Press (Cumberlege). 20s.
THEIR NAME LIVETH. VOL. I. Methuen. 15s.
THE RESTORATION OF OLD HOUSES. Hugh Braun. Faber. 16s.
PENCIL DRAWINGS FOR THE ARCHITECT. Charles I. Hobbis. Tiranti. 7s. 6d.
CHATEAUX OF THE LOIRE. Vivian Rowe. Putnam. 18s.
THE STEEL SKELETON. J. F. Baker. University Press. 42s.
SCULPTURE IN WOOD. P. Edward Norman. The Studio. 15s.

# EXHIBITIONS

PAINTING

At the time of Renato Guttuso's successful exhibition at the Leicester Galleries it was said of his work that 'it extends our experience of significant objective facts,' but this is deliberately confusionist phraseology; it does not refer to the kind of objectivity with which Courbet painted a plump woman in a hammock, but means that, in the art of Guttuso, human beings as such are of no account, and are valued only as political emblems. But him Guttuso is such as such are of the size of the s

tical emblems. By the time Guttuso has finished with a 'killed worker,' or a heroine of the fight for the land, I, or a 'shooting of patriots,' the human figure has become an appeal for violence, a 'clenched fist,' divested of identity and divorced from real occasions.

The taste for violence is one of the most respected attributes of the modern painter,



but recently, and especially in the work of the abstract expressionists, the very act of painting has become a violent mindless exercise, and the pictures that result from this activity are formless demonstrations of a yearning to besmirch and deface. Guttuso makes the same savage and ejaculatory use of line and colour, and like them turns the art of painting into a neurotic branch of athletics, and the fact that at the mental level of a street-corner agitator his work is more purposive and understandable does nothing to raise it above the documents of bourgeoise frustration.

Jean Dubuffet, too, is a brutalist, and an adherent of the a-formal heresy. He is also a comedian in the dadaist tradition, and his exhibition at the I.C.A. turned the Gallery into the playroom of an imaginary

and very special school where melancholic children feverishly devote themselves to the pleasures of smearing and daubing without ever brightening up. To illustrate his belief that matter is more important than form, Dubuffet exhibited a number of very substantial works, composed of a dull red substance smeared thickly and unevenly over some sort of support, which look like the rather battered samples of a dealer in hard tennis courts. Besides these, there were figurative works of n kind: half-formed effigies in sponge and slag; large, earth-coloured, gloomily highspirited portraits in a style based on the wildest scrawls of children; and, unexpectedly, a painting of four cows, 2-melancholy, lovable creatures who have



obviously tasted all the joys and miseries of a cow's life—which is a work of comic genius, as radiant and as beautifully painted as the finest Soutines.

Rodrigo Moynihan held a one-man show at the Leicester Galleries at the same time as Guttuso. It included excellent portraits of Victor Willing, Michael Law, Fiore de Henriquez and an unnamed girl, 3, some rather facile still lifes and land-



scapes, and the huge painting of the 'Penguin' editors, called 'After the Conference' which is an extraordinarily ambitious essay in the neglected art of illusionist painting. I understand that Moynihan intends to continue working on it, but even if he is unable to take it much further it will remain a monument to his courage, a challenge to younger men, and perhaps the most sustained and sensitive effort in our time to create a realistic composition on a large scale. Yet it is

sustained only up to a point. The composition seems absolutely right; the disposition of something like twenty figures has been brilliantly conceived, and their slow, casual drift through a couple of rooms is so natural that when one saw them from a distance they seemed to be on the point of mingling with the visitors to the Gallery. When one had a closer view of them, one found weaknesses of drawing, hesitant portraiture, areas of lifeless paint, a fumbling of the light in the middle distance, but in theory these are all blemishes which can be rectified. If the artist can somehow muster the endurance to go through with it to the bitter end, and I realize that the task can be very nearly a martyrdom, the picture will be a masterpiece created against the grain of the time, and likely to have an immense influence on the future relations between artists and society.

Edward Burra obtains a sombre richness from his use of watercolour which must be unique, and his habit of placing large, brilliantly coloured forms against low-toned backgrounds gives them an eery splendour, but his technique lends his vision an air of profundity which is illusory. The work in his recent exhibition at the Lefevre Gallery seemed more accomplished than ever, but his studies of the low life in ports and capital cities are a kind of synthetic genre painting, as if he preferred to find his material in film stills rather than the real thing, 4. He has been



likened to Rowlandson, but his vision is too remote from reality, too neurotic and Firbankian, to have much in common with the English comic tradition. His macabre sense of humour transforms everything into a malicious, rather fin de siècle caprice, and when he introduces flowers into his compositions he achieves 'deliciously evil' effects worthy of Odilon Redon.

In his second exhibition at the Mayor Gallery, the Australian painter James Cant continued his exploration of some of the seedier suburbs of London, 5. His use of paint is slowly growing more rich and lively, but his figures are still too quaint and flimsy. What gives his work its distinction is his poetic gift for assuring us that life goes on naturally and decently



behind even his grimmest façades. If only he can make his paintings more substantial, work with greater patience, squat more heavily with his subject and acquire the lone wolf's disregard of the art being made elsewhere, he has a chance of doing something as strong and just for the suburbs of North London as Edward Hopper has done for the villas, garages and lunch-counters of New England.

Robert Melville

MAN, MACHINE AND MOTION

The view of Machinery as an extension of man's personality, specialized hands and feet, long range eyes and ears, extra-big lungs and extra-thick skins, has already been advanced in THE ARCHITECTURAL REVIEW by D. E. Harding (Embodiments, February, '55) insofar as it applies to his static equipment, but the theme has now been extended to those appliances by which man extends his powers of movement in the exhibition Man, Machine and Motion at the ICA.\*

This pictorial anthology of man at speed, man at height, man at depth and man in space, was originally assembled for the Department of Fine Art in the University of Durham by Richard Hamilton, whose previous ICA exhibition Growth and Form was a feature of Festival summer, 1951. Where that exhibition pursued a Universal Analogy of Form, the present one uncovers a standard iconography of motion. The basis of selection of the material exhibited was that each image should show a motion-machine, or similar piece of equipment, and a recognizable man. Photo-

\* July 6-30, at 17-18 Dover Street, London, W.1.

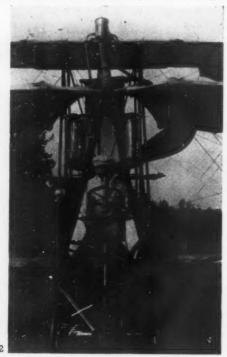
graphic images were preferred since photography is more or less coeval with mechanized transport and belongs to the same technological environment, but this rule has not been rigidly followed to the exclusion of patent-drawings or space-fiction illustrations.

Nevertheless the preference for photography, and the insistence on the recognizable and visible presence of man, sets definite limits on the material shown. There are very few images from the prephotographic era, but the oldest known photograph of a self-propelled vehicle is included, 1, Boydell's steam tractor of 1857, and this date marks the effective beginning of this picture-history of trans-



port. Present-day tendencies toward saloon bodies and pressure cabins have tended to make travellers and explorers invisible to the photographer, and for this reason the coverage tends to narrow toward the fifties, leaving the show broadest, thickest and richest in the period 1890–1920.

Thus there is a very rich haul of action portraits of the Pioneers of the Aeroplane and of the Automobile, and here, at once, standard iconographical patterns emerge.



Among aviators a tweed cap and a keen, if apprehensive expression are *de rigueur*, framed among the intricate structures of their inventions. The results are often



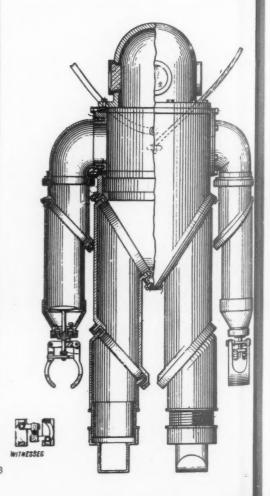
austere and formal, not at all the comic images to which Strand Magazine illustrations have accustomed us. W. F. Cody, the eccentric founder of British military aviation sits centralized, frontalized, hieratically enthroned, 2, while the Wright Brothers present a double profile, 3, as noble as a Renaissance medal, among their interlace of struts and wires, shafting and chains.

So these apparently obligatory iconographic patterns run, the product of artless photography and pioneer aviators far too preoccupied to think of pictorial effects. If the airman-in-space-frame is the product of a short period of technological history, the photographic breakdown of the different parts of a group-activity seems to be constantly present. The camera's power to capture gesture differentiates the functions of the members of Bonhours tandem-pacing team, 4, with merciless accuracy—the steersman alert



with eager crouch and forward glance, Bonhours himself on the following bicycle in a concentrated and businesslike stoop, while the second man on the tandem, whose function is solely to create the aero-dynamic disturbance which will tow Bonhours along, sits rigidly to attention, impassive and blank-faced. Fifty years later, a trick of the focal plane shutter, 5, keeps Ken Wharton, the active protagonist, full-bodied and reduces the passive spec-







tators to minimal pinheads, figures from a Giaccometti sculpture.

But one of the most suggestive of these iconographic themes is man's passionate attachment to his own image. Even in hostile environments requiring elaborate body-armour, designers of diving suits and space-suits still hope for a recognizably anthropomorphic form. Campos, in 6, is still fighting a rearguard action for the anthropoid shape in 1919, though the exigencies of deep-sea work have already driven it into a zombie-like rigidity, and space-imagination runs the same waythough common-sense suggests that personal space travel will probably be done in minute pressurized spheres in which a man can barely crouch, space-suit inventors insist that even in outer space men will still look like men, 7, just as they seem to anticipate that psychologically-'boredom, irritability, fatigue, disorientation'-outer space which will be much like any other place to Duodenal Man.

# LANDSCAPE

ROADS IN THE LANDSCAPE

During the next four years the government proposes to authorise the expenditure of some £120,000,000

landscape: reads in the landscape
Five different treatments: 1, typical English
suburban. 2, Route Nationale in the Ile-deFrance. 3, A803 on Salisbury Plain. 4 and
5, the Frankfurt-Kassel autobahn.

on roads. Can the roads which are included in this programme become an asset to the landscape, or will they, like so many of the existing roads, remain as alien constructions superimposed upon it? The answer will depend on many factors, including roadside planting and the design of road furniture, but the basic need is for the roads to be sited and engineered in sympathy with the landscape through which they pass, and for a common ground to be found between the essential character of each landscape and the essential character of a traffic artery. In the past too many roads have in the first place been sited and engineered without regard to the surrounding countryside, and have then been 'beautified' with equal disregard for the landscape and for the true needs of a motor road. For the safety and the pleasure of the motorist the landscape of the road should combine absence of distracting detail with provision of broad-scale, quickly-grasped interest. The garden treatment of small flowering trees, 1, is the antithesis of this need, which is, on the other hand, perfectly met by the massive landform and simple drifts of planting which are found in nature and are adaptable to most man-made landscapes. By recognizing the individual character of different landscapes the roads can become a part of them, adding interest without disrupting or imposing uniformity.

The French pattern of roadside trees, 2, is valid in a flat and cultivated land, where there are no contours to suggest diversions nor woods to give a basis for groups of planting. On the wide expanse of Salisbury Plain the road needs no planting, only engineering, which lays it like an undulating ribbon over the contours, 3.

The road snaking through the forests of West Germany, 4, is superb landscape because it is contained within the massed trees and inflected to the landform. The bridge is curved and saucered to maintain the swing of the line and gradient.

In smaller scale, more varied country, such as constitutes most of England, great sensitivity is needed, every curve of the land and group of trees calls for recognition by the road. Between Kassel and Frankfurt, 5, the carriageways on different levels fit themselves to the crossfall of the ground; the embankment is faded gently into the lower slope; the mounded central reservation masks the full width of the carriageways and carries the eye across the break in the slope of the











hill; planting carries the woodland across the road, which becomes part of the landscape, leading the eye into the composition.

Roads designed to a universal, preconceived pattern produce scars which no after-treatment can heal, and it is only by planning them in sympathy with every change of the countryside that they can become both efficient traffic ways and good landscape.

Sylvia Crowe

# HISTORY

ISOKON FLATS

Built with the avowed intention of 'providing living places which will not be obsolete in 1950,' Isokon Flats, Lawn Road, Hampstead, have successfully passed that term by five years, and now celebrate their coming of age on July 14, 1955. The history of this remarkable building is inextricably involved with the history of the Modern Movement in England, and features pioneer architects, pioneer exhibitions and famous architectural refugees, while it has housed an extraordinary cross-section of thinking England from Gordon Cullen to Agatha Christie, and in the immediately post-war years it helped to focus a crisis of the English avant-garde. As is so often the case, the project started simply enough, with Jack Pritchard (now Director of the Furniture Development Council) wishing to build a straightforward house for himself and his family. But, because the servicerequirements of a young professional family could not be met economically by one family on its own, he and Wells Coates found themselves in 1933 with a project to build a communal dwelling with some thirty small flats on four floors, with food and other services provided on a 'collegiate'

Couched in Wells Coates's uncompromisingly modern concrete idiom, this project, ingenious as its plan might be, only inspired alarm in real-estate financiers, who doubted that the flats could be let, but the projectors of the scheme seized the opportunity offered by the pioneer exhibi-

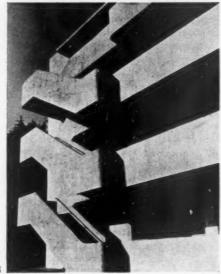


Miss Thelma Cazalet christening Lawn Road flats with a bottle of beer on July 14, 1934. Immediately behind her is Wells Coates.

tion of British Industrial Art at Dorland Hall, to exhibit the 'Minimum' flat, and thereby obtained enough lettings to make it clear that the scheme would work.

Wells Coates's design for the block was published in Unit One-another landmark in the Modern Movement in Englandand the completed building, having been 'launched' by Miss Thelma Cazalet, 1, on July 14, 1934, was illustrated in that fabulous volume of THE ARCHITECTURAL REVIEW (Vol. 76, 1934) which also contained Lubetkin's Penguin Pool, Sir Owen Williams's Empire Pool at Wembley, Morton Shand's serialized history of the pioneers of modern design, the first reviews of F. R. S. Yorke's The Modern House, Cyril Connolly's epoch-marking essay on the new publicity of Shell and LPTB, and Richard Neutra's Coco Tree restaurant.

Isokon Flats, quite apart from the intrinsic merits of Wells Coates's boldly plastic design, 2, were thus modern among the moderns, a monument to the



pious aspiration of salvation through good design and social consciousness which was the key-signature of English avant-garde thought in the Thirties. But hardly had the social experiment of Isokon got under way than the inhabitants had to move up a bit, and pack a little closer together, in order to accommodate distinguished architects fleeing from Hitler Germany. It is a mark of the esteem in which Isokon and its 'onlie begetter' were held that it was felt by Morton Shand that the accommodation of the Gropiuses and Marcel Breuer, 3, the Moholy-Nagys and Arthur Korn should be their proud duty, rather than other people's. Both Breuer and Gropius worked on the famous Isokon plywood furniture, Breuer designed the interior of the Isobar, and through Pritchard and Henry Morris-later an Isokon resident-Gropius was given the chance to work on Impington Village



Lawn Road's first birthday party, 1935. Left to right, Dr. Markova, Marcel Breuer, Ise Gropius and Walter Gropius.

College, another monument of the alliance of modern design and social enlightenment in the Thirties.

The refugee architects departed for the USA, and were followed by rather more than a fair quota of refugees from the Spanish War, while in the larger war which followed, Isokon escaped shaken but unbroken. But just when a decently mellowing period of repose after the years of crisis might have seemed a just reward, Isokon Flats were suddenly catapulted back into the limelight. The disintegration of that alliance between the various elements of the English avant-garde which had made Isokon and Impington possible. had already begun to show in such gestures as Cyril Connolly's appeal for American food-parcels for English Intellectuals, and now took a dramatic architectural turn, in 1946, when his magazine Horizon published the result of its Ugliest Buildings Competition, in which Isokon Flats split second place with a slum property in Cumberland. Walter Gropius and Siegfried Giedion answered this challenge to the architectural conscience of the Modern Movement with dignified letters of reproof while in the Architects' Journal, Astragal laid aside the mask of comedy and read Mr. Connolly (in 'his unquiet playpen') a stiff sermon about the competition in general, and about the description of Wells Coates as "rchitect unknown' in particular.

The fuss died down, and the nominated year of 1950 passed without any public enquiry as to the obsolescence of the living places, and now in their twenty-first year it seems that Isokon Flats can settle down with decent dignity among the accepted inhabitants of Hampstead's lower slopes, though the very positive character of its design will always make it a building which divides opinion, and the nature of its social structure will always make it a topic in discussions of communal living patterns.

# SKILL

A MONTHLY REVIEW

OF BUILDING TECHNIQUES & INDUSTRIAL DESIGN

1 interiors
2 design revier
3 techniques
4 the industry



\* fineproofed psywood suspensed could on as hangers \*\*
\* fineproofed psywood mall panething on 2° softwood grounds -ventuation extract from bar. --

lunning to Recess

1° solid Rosewood bottle shelf .

4" manon plate glass with engraved pattern backed

6'x 3' R.S.J. canaying 3' basezo wall

bottle drawers on "Auto-set" Slides, fronts lined with cork -

unset solid Rosewood Routed handles

Sw cork tiles on 4" Weyroc floor, carried on 4"x2" joists -

pection through refrigerated cupbeard libestrated on isl

# 1 INTERIORS

BAR AT GROSVENOR HOUSE

Designer: R. D. Russell

Chief Assistants: R. H. Leigh and Ian Hodgson.

The new cocktail bar is to replace the existing one, which was too small and too isolated. A shop in Grosvenor House with one door and window on to Park Lane and another door to the main hotel lounge became vacant and provided the site. Arrangements for the service of drinks to

55





3, the emergency exit to Park Lane. 4, the large curved seat next to the entrance. 5, one of the specially designed chairs. 6, the main entrance

from the lounge. continuous wall seats between the bar counter and the window.

the lounge already existed in the area behind the east wall of the new bar. Backing on to this wall was therefore the logical position for the bar counter. This position fitted in very well with the division of space in the room itself. The room con-

> tains two freestanding columns, part of the structure of the building. The bar counter extends to join the column near to it, so providing two separate runs of counter, each served by one barman. The barmen also serve drinks through a hatch

in the side wall to the waiters of the hotel lounge. Each barman has his own complete service unit, with the equipment arranged in the correct working sequence.

The upper counter of the bar is kept clear for the use of customers. Below this counter is a service shelf with working space for mixing drinks, a small sink and a tank for ice and chilled bottles. The floor behind the bar is raised by one step. The bar counter area is defined by stone paving. The window is screened by net curtains and, to avoid heat loss, a second window of glass slides is set on the inside wall face with plants arranged in between.

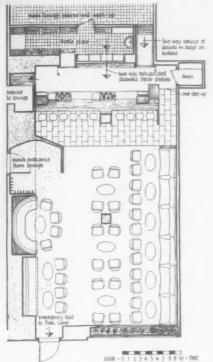
General lighting is direct from tungsten fittings concealed above openings in the







ceiling panels; the lighting of the deep recesses over the fitted seat and immediately inside the entrance door is indirect from fluorescent lamps above a louvred dropped ceiling. A system of forced ventilation is installed, the extracts set in a groove at the top of the walls, the intakes below the fixed seating.



The walls and ceiling are lined throughout with veneered and lipped panels of aspen, with a knotty grain and bright nicotine colour. Parts of the wall related to the fixed seating are veneered with Brazilian rosewood. The fittings behind the bar, the bar counter, the entrance door and adjacent walls are also of Brazilian rosewood; the bar top is solid timber with a special finish resistant to heat and alcohol. The specially designed loose furniture is of Brazilian rosewood with hide on table tops and the upholstered parts of chairs and stools.

The colour is developed from the tan of the aspen and the red and black of the rosewood—a stronger yellow leather for the chairs and a stronger red leather for the fixed seating, and black for the bar stools and tables. The paved area in front of the bar counter is of warm grey Purbeck, the carpeting of two tones of grey. The window curtain, drawn at night and brilliantly lit from above, is of clear scarlet wool, and the two columns are finished in a lower tone of Chinese red enamel. The strong and varied greens of the window plants provide contrast with the prevailing warmth.

## BAR AT THE MIDLAND HOTEL, MANCHESTER

Designer: John Carter

The triangular plan of the new bar is determined by the structure of the building, and every device has been used to make the most of the possibilities offered by this form. The room is separated from the foyer by a stepped wood and glass screen, and the twenty-foot long bar is

placed at such an angle as to be easily visible from the hotel entrance.

The white ceiling is of alternating solid panels and eggcrate lighting units, fitted with the new de-luxe fluorescent tubes, and framed by hardwood ribs. The bar front is in hardwood inset with small illuminated panels, and a hardwood lattice serves to frame the opening. The counter top is white and the back fittings are in red, blue, black and white on a mirror background. The difficulties presented by the need to retain a large structural pier have been practically overcome by splitting it into carefully considered colour sections, thereby lightening its bulk and imparting interest where none would have existed otherwise. The carpet is composed of alternate widths of dark purple and grey. The fixed recessed seating and the loose chairs and bar stools are upholstered in black, red and yellow material.

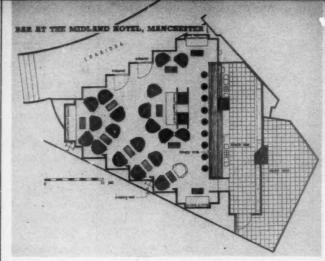




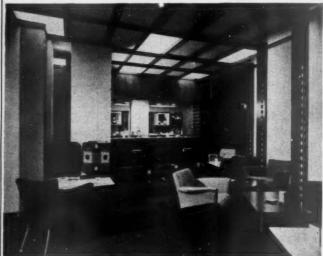








3, looking into the bar from the foyer. 4, the bar counter. 5, inside the bar with the entrance doors on the left.



# 2 DESIGN REVIEW

# ITALIAN FURNITURE AT HEALS

Although people, objects, and ideas circle the globe at ever increasing speed, Heal's winter exhibition of Furniture, Pottery, etc., from only as far away as Italy brought us that particular stimulus that comes from originality that is also foreign.

Some of the Italian dining chairs combine extreme sophistication of colour and finish with plain engineering construction. The metal sections are very heavy, and it is the combination of weight, and the resulting stability, with the pastel satin effect of the upholstery, that gives a jolt to our accepted ideas. These chairs are chic because the design is emphatic and uncompromising.

[continued on page 59

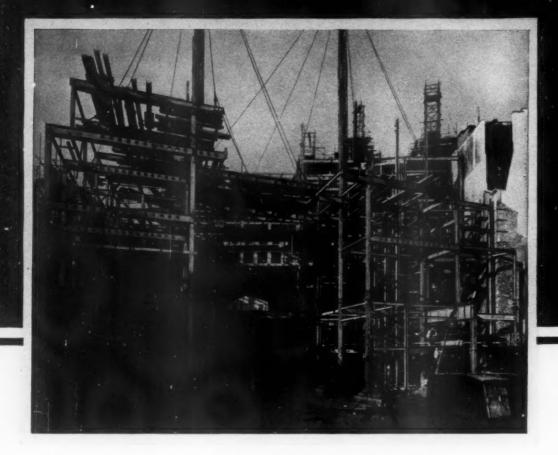


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B·C·S·A



# The new Lloyd's building

This building, like the earlier Lloyd's building of 1924, has a Dorman Long steel frame.

The illustration shows some of the steelwork, which totals 4,000 tons.

This is but one of a great many examples of the use of Dorman Long steel in the post-war rebuilding of the City of London.

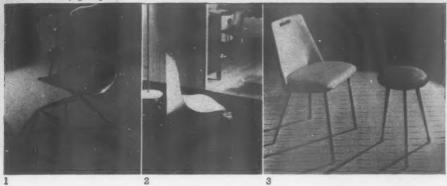
Architect: T. E. Heysham, Esq., F.R.I.B.A. Consulting Engineers: Oscar Faber & Partners.

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Several chairs of this type come from Rima of Padova. 1, metal construction, seat and back in brightly painted wood. The large uncompromising fixing of the back can be seen in 2, background. Low centre of gravity combines with resilience to make this a very comfortable chair. £13, or with seat and back upholstered in

in shining, considered, simplicity. £15 10s. The Arteluce lamps in brass have a sophistication very proper to the material, 5, a wall bracket. £16 18s.

In contrast to these urbane accessories is the wealth of ingenuity and beauty of the traditional wickerwork. There are baskets of every kind and scale,

> trays, letterracks, chairs. This work is less prohibitive in price than the furniture.

> In marked contrast to the Rima chairs are those illustrated 6 to 9. 6, a prim design, though of excellent finish, brings

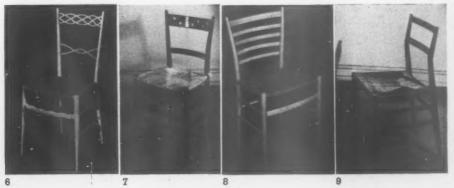
to the boudoir just a touch of the servant's bedroom. Admittedly the latter has housed and preserved for us much lovely and simple furniture, but the two styles are not compatible. There is, however, real elegance in the detailing of the seat. £21 10s. 7 and 8, also detailed with care and finesse, are products of Figli di Sanguineti. Armchair £10 15s. Upright £5. The seats are rush. 9, a simpler and more telling statement by Amedeo Cassina. This rosewood chair has a cellophane seat and sells at £7. The cellophane is available in four bright colours.

Diana Rowntree



plastic material with a satin finish, 19 guineas. 2, centre, a single metal sheet is folded to form the sitting unit and supported on tubular legs. The sheeting is covered in plastic material with leather finish. £13. 3, a more conventional combination of upholstery and metal frame. £18 19s.

The Italians are using brass with an urbane elegance very soothing to our chrome-dazzled sensibilities. No satin finishes here, nor evidences of the craft workshop—no beating, chasing or engraving. Pietro Maffeis uses brass as the supporting unit of his occasional table, 4,



### FRENCH FURNITURE AT WOOLLANDS

Woollands' Modern Interiors, usually most attractive, assumed an added breadth and spaciousness for its French fortnight. Since the amazing prices of furniture and ceramics in France, with British duty added, will generally prohibit any actual buying, let us analyse the validity of the impression.

André Motte's metal chairs with cushions in various but equally felicitous bright colours, 1, have a breadth and an excellence of detailing I have not seen equalled. They are exceedingly comfortable, though,



at eight times the price, certainly not eight times as comfortable as the Race Springbok. The French designers seem to have overcome the minute problems of detailing metal furniture, which tend in this country to be accepted as snags in the nature of the material. Another chair of metal construction was by Alain Richard, 2, 25 guineas. The generosity and directness of French taste



is perhaps most happily demonstrated by a table and sideboard made by a firm called Meubles TV of Paris. The table, 2, designed by Guariche is the direct visual expression of the structural problem



involved. The width of the lateral supporting member even varies in accordance with the bending moment. This simplicity turns out to be extremely flattering to the mahogany. The scale and simplicity of the sideboard by Janine Abraham, 3, is here shown at a disadvantage, being topped off by a regrettable set of port glasses by André Macon; these sell at 2 guineas the set, with jug. The sideboard retails at 95 guineas.

The British conception of comfort by sheer depth of upholstery is unknown in France. Two alluringly-shaped fireside chairs, 4, right, by Jean Souvrain, 50 guineas, and the striped one by René Drouet, 52 guineas, fail completely to fulfil their promise of comfort. One feels that they are so elegant it would be worth re-designing the human spine on the principle of a plastic-covered spiral, in order to enjoy their curves. Jeanneret's model, left, in the idiom of the Crafts Movement is included here in grateful acknowledgment that even a pioneer will have his little joke.

The most striking feat of design in this exhibition, and the most typically French, is André Monpoix's success in bringing the largest possible scale to the design of a coffee table, 4.

More informal, though no more accessible in price, 52 guineas, is the table with low stools by René Drouet, 5. Beothy's rug on which they are shown is a welcome find, making a positive contribution both in feeling and scale.

The most notable 'pictures' shown were the Braque prints, for which I think no praise great enough, and the Lurçat tapestry. The use of tapestry to fill the same role as easel painting is an art form that bothers me. Perhaps it is the historical associations of tapestry as a functional wall covering, perhaps a persistent disappointment that the revival of this craft is not going to mean that we can all hang whole wall surfaces with entrancing designs in this warm and agreeable texture.

A wide range of craftsmen's ceramics were shown, from Picasso's exuberant goose, shown in 3, 75 guineas, down to ashtray level. There was much variety and originality among the ceramics but the true excitement of this exhibition was in the breadth of the furniture.

## CORRECTION

Apologies are due to Conran Furniture for a wrong description of their conical chair in the April issue. The iron framework is in fact hot-dipped phosphated before being given two coats of stove-enamel.

# 3 TECHNIQUES

# DOMESTIC OIL BURNING EQUIPMENT

by John Voelcker

The steadying of the fuel supply position and the increase in the number of people who are able and prepared to pay for labour saving equipment have caused a renewed interest in oil as an alternative to gas, electricity and solid fuel for domestic heating and hot water. In the article below John Voelcker sets down what an architect should know about this type of fuel and about the equipment required to use it.

To a surprising extent a nation's choice of fuel is a matter of custom, if not of accident. There seems to be no fundamental reason why oil, which has so long been an alternative for large installations in this country, should have only recently (if we neglect a short-lived boom before the war) become an alternative for domestic use. Labour saving and cleanness are the chief incentives for using it, high installation costs the chief drawback. Sweden and the United States are the countries which chiefly use oil in the home. The social structure of these countries cannot be greatly different from that of the United Kingdom: there must be roughly the same proportion of people over here who have enough money to afford an outlay on equipment while not having enough to pay for domestic service.

Oil is cheaper in running cost than

the two fuels which have the same advantages: it is reported to be 40 per cent cheaper than electricity and 20 per cent cheaper than gas, but about 20 per cent more expensive than coke. Bearing in mind that the kind of household which is likely to contemplate going over to oil would have an annual solid fuel bill of £50 to £100, is it worth their while to pay an extra £10 or £20 per annum to evade the daily or twice daily stoking—and the mess? To this annual charge must be added the cost of conversion, which varies between £90 and £300 depending on the type of burner and the accuracy of operation required. We speak habitually of 'conversion' to oil, of 'going over to oil,' as though there were no such thing as designing for oil in the first place. In fact—as we shall see—there is some justification for this phrase-ology. For though there is a surpris-

ing number of oil burners on the market there are, to the best of our knowledge, only three which provide a boiler to match. In the great majority of cases, therefore, installing an oil burner means affixing an oil burner to a solid fuel boiler and providing a tank for storage of the oil. In addition, since the properties of a solid fuel boiler are not favourable for oil burning, it will almost certainly be wise to attach what is called an 'economizer' to the boiler flue. Lastly, since oil firing is very susceptible to thermostatic control it may well prove worth while to apply additional controls to the system.

## fuel oils

For practical purposes there is only one type of oil used for the equipment discussed in this article. It is a

Gas Oil categorized as Class A in BS. 742, 'Fuel Oil for Burners.' This is a heavier, less readily vaporized oil than the paraffin used in portable oil burners, and lighter than the coal tar oils or heavy grade fuel oils used in large installations. Class A gas oil is delivered in road tankers and costs about 1s. 2½d. per gallon delivered in quantities of 500 gallons or more. Deliveries are very reliable, and indeed, one firm of distributors has a project for a 'milk round' in which they will make themselves wholly responsible for maintaining the level of consumers' storage tanks.

## storage tanks

The size of the storage tank can vary between wide limits. One opinion favours a 600-gallon tank for domestic use. This enables the owner to receive deliveries of 500 gallons at a time (which commands a cheaper rate) while leaving a comfortable margin for emergencies. Since the average consumption of a small house is of the order of 800 to 1,200 gallons per annum, this would give an average delivery period of six months—which seems reasonable. Another opinion (which emanates from a firm of fuel suppliers) recommends a tank of only 150 gallons. This would be small enough to be sited adjacent to the burner, and in fact some firms of burner makers supply a tank of this capacity with the burner.

Since the type of fuel we are considering has a flash point 'not below 150°F.' its storage is not subject to petroleum regulations. The specification for the tank itself is covered in

[continued on page 6]

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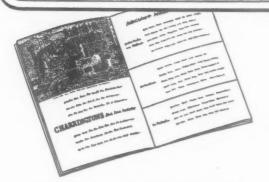
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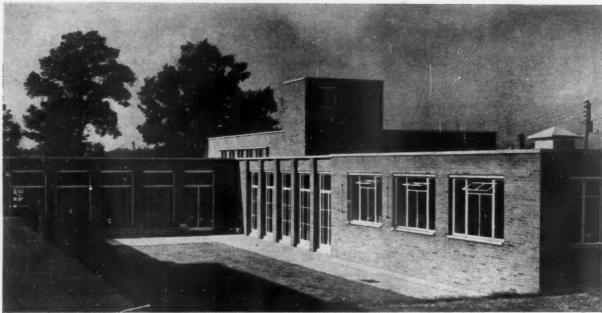


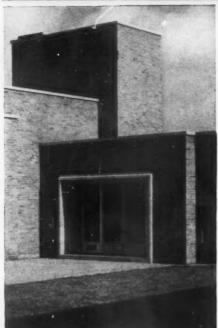
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# WATER EATON JUNIOR SCHOOL

BLETCHLEY

# faced with IBSTOCK Golden-Brown HAND-MADE BRICKS

Architect: County Architect, Buckinghamshire County Council.

Contractors: G. H. Wright, Ltd.

To suit the open nature of structure and surroundings, Ibstock Golden-Brown Hand-made Facing Bricks were selected for this fine school at Bletchley. The range of Ibstock Facing Bricks is illustrated in full colour in a catalogue specially produced for Architects. A copy will be sent immediately upon application.

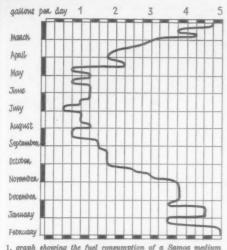
# TOSTOCK Owing to the present demand, supplies of Jacings of most types are booked for a long time chead, and reservations for 1955/56 are now being made. FACINGS for Colour

IBSTOCK BRICK & TILE CO. LIMITED, near LEICESTER

London: L.M.R. Goods Depot, Wright's Lane, Kensington, W.8

Phone: Ibstock 391 (2 lines)

Phone: Western 1281 (2 lines)



1, graph showing the fuel consumption of a Samoa medium pressure atomizer (see Fig. 11) from March 1, 1954, to March 1, 1955. The burner is installed in a small house and provides central heating (giving a 30°F, temperature rise in coldest weather) and domestic hot water.

## continued from page 60]

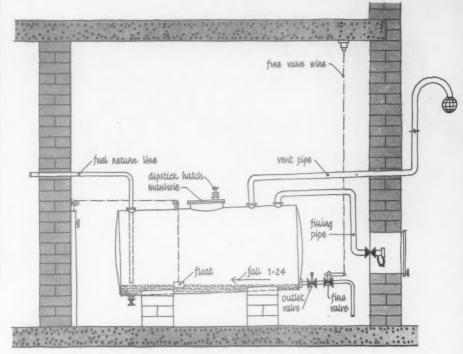
BS. 799: 1953, 'Oil Burning Equipment.' Further advice is given in a brochure entitled 'Definitions and recommendations issued by the Fire Offices Committee in connection with liquid fuel, etc.' which is obtainable from the Committee (address 65-66, Watling Street, London, E.C.4) though the latter adds little that is not covered by the British Standard. An interesting point about these recommendations is that they make a distinction between a tank which has a capacity not exceeding 150 gallons and which is defined as a 'service tank' and one of over 150 gallons capacity which is a 'storage tank.' A service tank can be located almost anywhere: it needs no catch pit and the only limitation is that it should not be so placed that escaping oil can reach a heated surface. A storage tank, on the other hand, if it is inside a building, should be located in or below the lowest storey and should either stand in a tank chamber of fire-resisting construction or be buried in the earth with at least 6 inches of concrete cover. The second of these alternatives is unsatisfactory, there is no means of giving main-tenance. The tank chamber requires 9 inches brick or a inches concrete and a fireproof door. Further, the floor and lower walls of the chamber must be oil-proofed and the sill of the doorway must be high enough for the chamber bottom to serve as a catch pit to receive all the oil if the tank should spring a leak.

Another practical point which must be watched is that if the tank is below the level of the burner a pump will have to be provided. Further, if a service tank is placed adjacent to the burner they must not be in a habitable room, as the tank may smell. The last consideration which affects tank placing is ease of refuelling. The oil tankers' supply pipe is long, but not limitless.

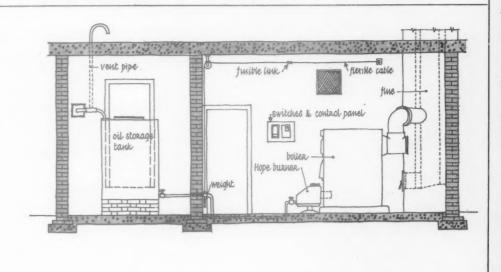
A good position for the tank would be the far end of a garage when this is near the boiler: here it would be protected from extremes of weather yet easily accessible for maintenance and fuel delivery.

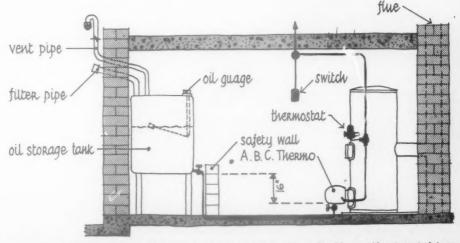
# combustion principles

Though oil firing is a specialized subject and beyond the reach of most architects, it is not beyond their power to grasp the mode of operation of the main burner types or—most important of all—the

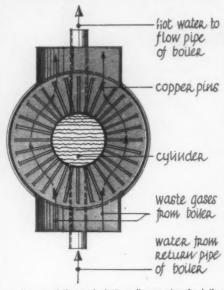


2, diagram showing a 600 gallon storage tank and tank chamber, suitable for Grade A oil fuel.

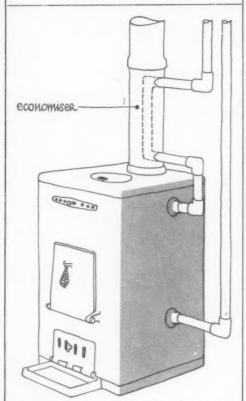




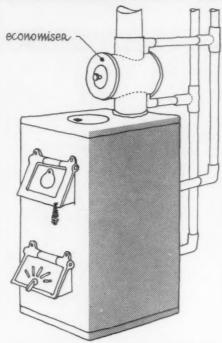
3, two manufacturers' suggestions for the layout of oil-burning equipment. Above, a 'Hope' burner with a storage tank in an adjoining tank chamber. Below, an 'ABC Thermo' burner with a storage tank in the same room. Note the 'safety wall' to prevent spill oil from reaching the burner.



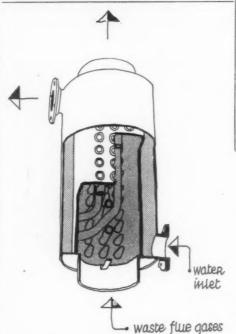
4. diagram of the standard 'Sunrod' economizer for boilers up to  $360,000\,BTU$  rating.



5. diagram of a 'Sunrod minor' economizer, for boilers up to  $65,000\ BTU$  rating.



6, standard 'Sunrod' economizer fixed to a boiler flue. Note that the position of the economizer may vary considerably.



7, diagram illustrating the operation of the 'Clarkson' economizer. 'Thimble tubes' in the waterway project into the flue where they take heat from the weate flue gases. This type is suitable for boilers of 90,000 to 600,000 BTU rating.

characteristic of oil burners when they have to operate in solid fuel boilers. In order to make these points clear it is necessary to discuss briefly the fundamentals of oil combustion.

Fuel oils are compounds of carbon and hydrogen; both of these burn readily in the presence of oxygen, carbon becoming carbon monoxide and then carbon dioxide, hydrogen becoming water or steam, as heat is liberated. For every pound of fuel oil 3.31 lb. of oxygen are required for complete combustion. It would not be a practical proposition to supply pure oxygen to the burner, particularly in small installations, but there is an abundant supply in

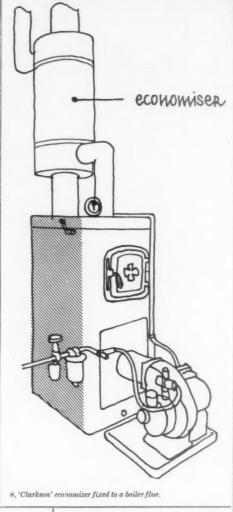
the atmosphere which is made up of oxygen and nitrogen in the ratio of about 7:2 by weight. It will be seen from these figures that approximately 14.5 lb. of air are required for the theoretically complete combustion of 1 lb. of fuel oil.

Because fuel oils cannot be burnt unless sufficient oxygen is present, bulk storage with a relatively small surface area does not provide a serious fire hazard; conversely a high degree of inflammability is required within the combustion chamber if ignition is to be achieved and the fuel efficiently burnt. It is necessary, therefore, to devise some method of preparation which considerably increases the ratio between the sur-

face area and the volume of oil fuel. This process of modification is the chief function of an oil burner and demands considerable theoretical study as well as extremely precise

engineering.

There are two distinct methods of preparing oil fuels for ignition in general use; one method involves equipment designed to vaporize the fuel by heating it to a certain temperature and simultaneously introducing the required quantity of air for combustion. This method is particularly suitable for small burners where the temperatures are not sufficiently high to cause uncontrolled cracking of the oil in the vaporizing pot. Vaporizing equipment is robust,



simple to operate and maintain, and vaporizing units are the cheapest type of equipment available. The other method involves equipment which atomizes the oil before it is ignited. Any oxygen bearing medium may be used as an atomizing agent: air is generally used, or steam for very large units. The principle of the atomizer is to break the stream of oil up into a mist of fine particles, and further, to set up an orderly turbulence in this mist so that when it is ignited the resulting flame is of a form which ensures that the oil will remain long enough in the combustion chamber to be fully burnt.

chamber to be fully burnt.

The flame in the vaporizing type of burner is normally vertical, that from the atomizing type being cone shaped, horizontal and usually between 6 inches and 1 foot long. With some experience it is possible to judge whether the burner is operating correctly by the colour of the flame. It should be bright, but orange in colour, darkening towards the edges; if insufficient air is present or the oil preparation has been incomplete, the flame will be red and sooty, and if there is too much air present the flame will be bright, white and painful to look at.

## the application to solid fuel boilers

It is a limitation of the present time that such precise equipment as an oil burner is generally fitted to an existing boiler not designed with the same degree of precision, and, more significant, not intended for oil firing. Solid fuel combustion is a con-[continued on page 63] 0

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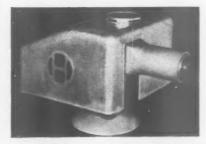
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# HOPE'S OIL BURNERS



# TYPE 'A' BURNER

SUITABLE FOR LIGHT FUEL OIL

CAPACITY RANGE:

65,000-400,000 B.T.U.s per hour

SEE DATA SHEET No. 123



# TYPE 'B' BURNER

SUITABLE FOR LIGHT OR MEDIUM FUEL OIL

CAPACITY RANGE:

400,000-1,600,000 B.T.U.s per hour

SEE DATA SHEET No. S.124



66666666666666666666

# TYPE 'C' BURNER

SUITABLE FOR LIGHT OR MEDIUM FUEL OIL

CAPACITY RANGE:

1,600,000-2,500,000 B.T.U.s per hour

SEE DATA SHEET No. S.122
Full Range on Application.

HOPE'S HEATING & ENGINEERING LTD.

Head Office & Works: Smethwick, Birmingham, 40 Branch Offices at London, Leeds, Cardiff & Hull

# Let's meet at 3.75

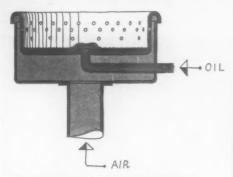
Please let us explain. We're not suggesting a mid-afternoon "get-together". "3.75" is a gauge.

In short, it's the thickness in millimetres of our rubber flooring between the ordinary \( \frac{1}{8} \) gauge (too light for many jobs) and the more expensive standard \( 3/16\th'' \)

3.75 is, indeed, a very happy medium. A solution in terms of adequate thickness at a price inside the budget. We can, of course, supply rubber flooring in whatever gauge you wish . . . tiles in the widest range of sizes and colours as our representative would be happy to demonstrate. He's a pleasant chap—you should meet him. Any time you say, morning or afternoon!



RUNNYMEDE RUBBER CO. LTD., 6, OLD BAILEY, LONDON, E.C.,



9, section through a 'Pric forced draught vaporizing pot.

## continued from page 62]

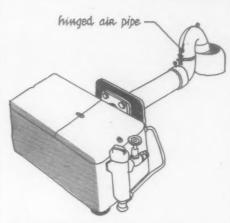
tinuous process once it has begun, and the system is warmed up; the output of heat varies within limits of about 25 per cent only. Oil fuel combustion on the other hand is an articulated process: either the flame is of the High-Low type or it is intermittent, only being alight at times of demand.

Heat transferred from solid fuel is principally by radiation to the sides of the chamber, by conduction where the firebed is in contact with the side and end wall heating surfaces, and by convection from the hot gases to

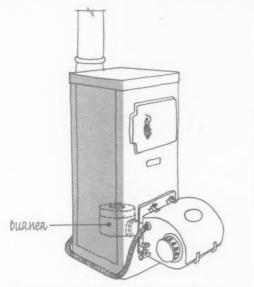
the secondary passes of the boiler.

In the case of oil there is no conduction: the main heat transfer is by radiation. As the flame has a high luminosity, both the gas temperature and the speed with which the gases leave the combustion chamber are high. It is all important, therefore, that they should give up their heat before entering the flue. An oil burner/boiler unit, therefore, consists of a combustion chamber proper which has as its chief object to keep the oil mist at a sufficiently high temperature to ensure complete combustion and an additional space above in which the escaping gases give up their heat to the secondary heating surfaces. The combustion chamber should be shaped to fit the flame and should have a volume of \(\frac{1}{2}\) cubic feet per gallon of oil burnet per hour. The space above may vary in shape but should have a volume of \(\frac{1}{2}\) cubic feet per gallon of oil burnet per hour.

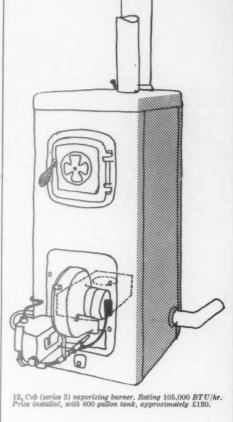
The space above may vary in shape but should have a volume of 2½ cubic feet per gallon of oil burnt per hour. The development of domestic boilers suited to oil firing has been slow probably because the initial cost of oil burners and auxiliary equipment is high enough without the potential consumer having to have a solid fuel boiler removed and a new one put in its place. As a result the manufacturers of oil burning equipment have shown considerable ingenuity in reversing the intended mode of operation of solid fuel boilers. One method, adopted by some Scandinavian manufacturers, is to connect to an existing boiler an combustion chamber complete; the existing boiler then becomes the secondary convection-heated surface, and one maker claims that it may be used for burning domestic rubbish. The method usually adopted in this country is to fix the burner into the lower part of an existing boiler and to connect an 'economizer' between the flue outlet and the stack. Two types of economizer are illustrated, 4 and 7. The first consists of a large number of copper nails radiating from a central water way through which the water system circulates. In the second the flue gases pass through the centre of the component and the water ways are round the periphery projecting into the gases in thimble tubes. Economizers save



Nu-way Home Fire vaporizing burner. Rating 15,000-65,000 BTU/hr. List price £47 10s. 0d. Price installed, including 150 gallon tank, £95.



11, ABC Thermo Domestic vaporizing burner. Rating 25,000-60,000 BTU/hr. List price £58 10s. 0d. Price installed, including 150 gallon tank, £110.



as much as 25 per cent in fuel efficiency by extracting heat from the flue gases.

When an existing boiler is converted to oil firing it is generally necessary to line part of the combustion chamber with refractories, as otherwise the sudden temperature changes, caused when the burner flame goes high or is turned on, would have a destructive effect. High quality refractories should be used, and it must be remembered that these will reduce the volume of the combustion chamber considerably.

## the problem of the flue

In an oil burning installation the products of combustion for an even heat output are rather less than for solid fuel. Further, oil burning, unlike solid fuel, is an intermittent as opposed to a continuous process. When, therefore, oil burners are installed in an existing flue, it is wise to provide a draught stabilizer which will cut down the draught due to the oversize flue and will damp out variations caused by intermittent firing and differing weather conditions. For a domestic installation a draught reading in the combustion

chamber of .05 to .1 water gauge is the condition to be aimed at. In designing the flue layout, particularly the discharge from the rear of the boiler to the stack, sharp bends should be avoided wherever possible, as these tend to cause pulsations in combustion of oil.

## types of burner

As will be seen from the foregoing there are two main types of burner: vaporizing and atomizing. These two classifications can, however, be further subdivided. The vaporizing burners can be classed as natural draught or forced draught (though since the natural draught type is only suited for burning kerosene, only the forced draught type is discussed here); the atomizing burners as low and medium air pressure atomizers or pressure jet atomizers. There is yet a fourth variety of the atomizer group, the rotary burner, but as these are only used for large installations they also fall outside the scope of this article. Vaporizing burners are 'semi-automatic' in that they require igniting by hand. Atomizing burners are fully automatic and require no attention other than turning on the electric current.

## forced draught vaporizers

In this type of burner the fuel is delivered to a heated metal pot where it is vaporized. The correct quantity of air is provided round the pot to mix with the vapour and ensure satisfactory combustion. The level of the oil in the pot and the temperature of the pot must be carefully controlled because the thoroughness of vaporization, and consequently of combustion, depends on these factors. In this type the correct amount of primary air is supplied to the vaporizing pot by means of a small fandriven by an electric motor. Vaporizing burners are normally hand lit; but once alight the burner operates automatically on a thermostatically controlled high-low flame, the turn-down ratio of high and low flame varying from one manufacturer to another between 4:1 and 18:1; the larger ratios economize fuel when the demand is intermittent, but where there is a constant demand for heat the smaller ratios tend to be more economical, because very low flame combustion is infeficient. The illustration, 9, shows a section through a Forced Draught Vaporizing Pot, the perforations in the pot side being forced air ports. Illustrations 10-12 are all burners of this class.

[continued on page 64

### continued from page 63] air pressure atomizers

This group is divided into low and This group is divided into low and medium pressure atomizers, though the principle is the same for both. The burner contains a compressor driven by an electric motor, an oil metering device and a jet nozzle. Unlike the vaporizer, the air and oil Unlike the vaporizer, the air and oil are mixed before they reach the combustion chamber, the compressor emulsifies the fuel which is metered to the jet nozzle, where it is ejected and ignited. The jet orifice may be fairly large since the fuel is metered before reaching it: this is an advantage, for clogging seldom occurs and a considerable range of oil grades can be used. Operation is fully automatic and the ignition is intermittent. the and the ignition is intermittent, the flame being cut off when heat input is not demanded. The illustration, 13, is an atomizer of this class.

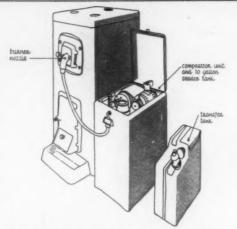
is an atomizer of this class.

The medium pressure burner, 14, is similar in principle to the low pressure, but the compressor is more powerful and, therefore, the possible output ratings are higher. Hitherto, few burners of this type have been used for deprestic numbers because used for domestic purposes because the assembly is complex and, there-fore, expensive. Certain advantages should, however, be borne in mind: they are robust and are easily maintained.

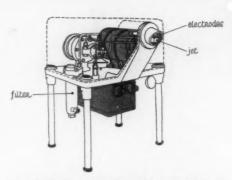
### pressure jet atomizers

This is the most widely used type of burner, suitable for a wide range of outputs and for applications to different types of boilers. Unlike the Vaporizing or Air Pressure Burners, the Pressure Jet does not require a metering device, as the jet orifice itself meters the fuel and any excess fuel is returned to the storage tank fuel is returned to the storage tank by means of a by-pass valve and pipe line. The advantage of this arrangeline. The advantage of this arrangement is that the construction and operation are simplified, but the efficiency of operation will depend very considerably on the accuracy and quality of the jet orifice. Until recently the difficulties of accurate machining have retarded the development of jets capable of metering ment of jets capable of metering small amounts of fuel, but research into the manufacture of gas turbine equipment for aeroplanes—where even smaller magnitudes than the smallest smaller magnitudes than the smallest oil jet (0.000 inch diameter) are required—has helped the burner manufacturers in this respect. The risk of blockages is considerable in the Pressure Jet burner and it is always necessary to use filters to protect the orifice; these are usually made of seconds treated to the protect the orifice; these are usually made of specially treated papers and require renewal once a month.

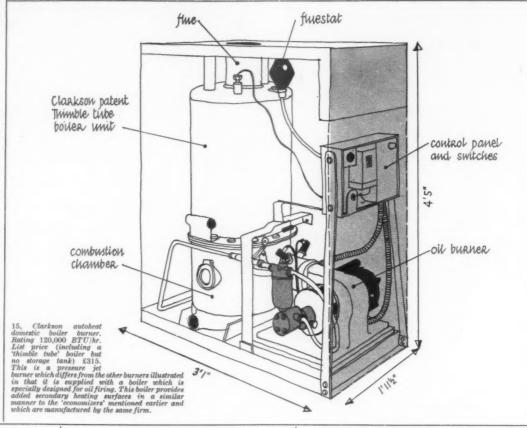
Pressure Jets are normally fully automatic and ignition is intermittent. When the burner is operat-[continued on page 65

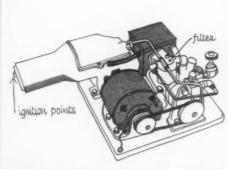


13. Emulsor low-pressure atomizer equipment. Rating 20,000-75,000 BTU/hr. List price £125 (which includes a 10 gallon service fuel tank incorporated in the unit). It must be noted this burner is unsuitable for installation in pot type boilers.

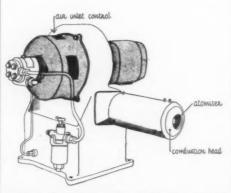


14. Samoa medium pressure atomizer. Rating 30,000-100,000 BTU/hr. List price £150. Note there is a second size of burner which has a capacity of 70,000-200,000 BTU/hr. The burner is mounted on a metal table with adjustable legs so that the jet can be located at any vertical position between 9½ inches and 17 inches above floor level.

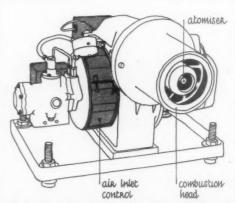




16, Hope's type 'A' pressure jet burner. Rating 65,000-165,000 BTU/hr. List price £100. Price installed, with 700 gallon tank, £285-£295.



17, Doby L4/1 pressure jet burner. Rating 75,000-175,000 BTU/hr. List price £135.



18, Brockhouse pressure jet burner L.O.175. Rating 75,000-175,000 BTU/hr. List price £135.



the trend is to Fuel Oil

More and more architects are specifying oil firing for central heating plants in blocks of flats, hotels, offices and similar large buildings.

The unique flexibility of oil firing is such that heat can be instantly, automatically and accurately controlled through the widest variations to meet peak loads. Outstanding cleanliness in use, high burning efficiency, negligible ash content . . . all lead to economies in handling costs, storage space and ash disposal.

Esso Fuel Oil-delivered to your premises from distribution points located throughout the country-may well be the answer to your heating problem.



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FOR ALL HEATING APPLICATIONS

• For interesting and informative literature on this subject write to Esso Petroleum Company, Ltd., 36, Queen Anne's Gate, London, S.W.I.

# continued from page 64]

ing the fuel is ignited by a 10,000 volt spark arcing across two electrodes at the jet face. Some manufacturers arrange for the spark to operate continuously during combustion, others arrange for it to cut out when ignition has been achieved; in the latter arrangement it is necessary to devise means to keep the flame stabilized at the jet face.

### conclusions

With the small amount of data at present available it is difficult to indicate clearly how the choice between the semi-automatic vaporizer and the fully automatic atomizer should be made. In general it appears the vaporizer is initially the cheaper installation, but at the same time its response to control is not so precise as the atomizer. Further, the continual presence of the burner flame,

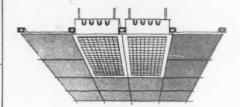
inefficient when burning low, may result in running costs greater than an atomizer with the same output.

The choice between the two types can only be made on the basis of careful consideration of the particular requirements; when the quantity of heat required is between 25,000 and 80,000 BTUs, and the frequency of demand does not fluctuate too considerably during a 24 hour cycle, a vaporizing burner, of the correct capacity and carefully set, should prove reliable and economical. The atomizer, on the other hand, is manufactured to generate greater quantities of heat, and, therefore, should be used in situations where extensive space heating is required, and, because the flame is completely cut off when there is no demand for heat, it is particularly suited to situations where demand fluctuates and varies in quantity between wide limits.

Equipment shown in the fillustrations is manufactured by the following firms: 3A, 16, Hope's Heating and Engineering Ltd., Smethwick, Birmingham, 3B, 11, Associated British Combustion Ltd., Porchester, Farsham, Hants, 4, 5, 6, Sunrod Ltd., Cray Avenue, 8t. Marcham, Hants, 4, 5, 6, Sunrod Ltd., Cray Avenue, 8t. Marcham, Hants, 4, 5, 6, Sunrod Ltd., Cray Avenue, 8t. Marcham, 15, 15, The Clarkson Thimble Tube Boiler Co. Ltd., 15, Fetter Lane, London, E.C. 4., 9, Prior Stokers Ltd., 1-5, Brandon Road, Yorkway, London, N. 7, 10, Nu.way Heating Plants Ltd., Draitwich, Worces, 12, Vaporheat Ltd., 212-213, Grand Bdgs., Trafalgar Sq., London, W.C.2, 13, British Olburners Ltd., 9, Warren St., London, W.I., 14, Franglo Producte Ltd., 3, Pipe Lane, Bristol 1, 17, British Doby Stokers Ltd., 4, Stratford Pl., London, W.I., 18, Brockhouse Heater Co. Ltd., Victoria Works, West Bromwich, Staffs.

## RECESSED LIGHTING FITTINGS

Modular co-ordination in industry now generally takes the form of co-ordination round certain recognizable structural elements, such as the curtain wall or the suspended ceiling. An example of this is afforded by BTH's 'module' lighting fittings which have been designed to fit into the various proprietary suspended ceilings. The basic fitting comprises a



sheet steel box with a flange which has one outside dimension of 2 feet and a second outside dimension which can be 2 feet, 3 feet 4 inches, 4 feet or 6 feet. The box (which is suspended from above the ceiling) can receive tungsten or fluorescent lights (or both) and can be fitted with a wide variety of diffusing panels. The British Thomson-Houston Co. Ltd., Crown House, Aldwych, London, W.C.2.

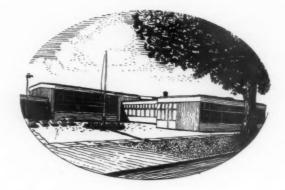
[continued on page 68

# 4 THE INDUSTRY

### ARCHITECTS' COLOUR RANGE

There are repeated signs that architects are at last coming to their own in the composition of paint manufacturers' colour ranges. For too long colour cards have been dominated by the reputed preference among paint users for the different shades of mud. A particularly good colour book has just been published by Joseph Mason & Co.; good both in the range of colours which it shows and the

business-like way in which it shows them: dual sheets of generous size enable you to compare any shade with any other while on the back of each leaf is printed the reflectance value of the colour on the face. Lastly, part of the book is devoted to 47 colours chosen from the Archrome (Munsell) range. In preparation advice was given by the architects Samuel Morrison and Partners. Obtainable from Joseph Mason & Co. Ltd., Nottingham Road, Derby.



General Contractors for the
Burleigh County Secondary School, Hatfield

# WELWYN BUILDERS LIMITED

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Christ Church Cathedral, Oxford, from a recent painting by Felix Kelly,



Christ Church Cathedral, Oxford, in a fine illustration, in one building, of architectural development from Norman to Tudor times. But it is very much a living church and attracts large congregations. An oil-fired heating system was installed in 1950.

# CHRIST CHURCH CATHEDRAL HAS A MODERN HEATING SYSTEM

It is kept comfortably warm by oil-fuel.

A CATHEDRAL CHURCH, many centuries old, is not the easiest of buildings to maintain at a comfortable temperature, one would think. But Christ Church has no heating problem. It has an oil-fired heating system—the last word in efficiency, cleanliness and ease of maintenance. The building is quickly warmed up to the temperature chosen and kept at this temperature for as long as is required.

There is no difficulty about mainten-

ance. There is no stoking to be done. No ash to clear away. The system virtually runs itself. And because oil is such a clean-burning fuel there is the minimum of atmospheric pollution—an important point in a city of so many architectural beauties as Oxford.

These advantages of oil-fired heating are equally important in many other public buildings—in blocks of flats and offices, in hospitals and schools, in factories and large stores. In largish private

houses, too, there is every reason for using this labour-saving, automatically controlled heating system. Have you considered making provision for oil-firing in any of the buildings you are designing or modifying? For detailed information of a technical nature please write to Shell-Mex and B.P. Ltd., Fuel Oil Dept. 13G, Shell-Mex House, Strand, London, W.C.2. A representative will be glad to answer your queries, and this will, of course, place you under no obligation.

# CONTRACTORS etc

School at Sheffield. Architects: Architects' Co-Partnership. General contractors: Public Works Department, Sheffield. Sub-Contractors: Steelwork and external cladding: Hills (West Bromwich) Ltd. Heating installation: Wright Bros. (Sheffield) Ltd. Hot water services: R. E. Heathcote & Sons. Electrical installation: Yorkshire Electricity Board. Piling: The Cementation Co. Laboratory drainage: Chemical Pipe & Vessel Co. Gas installation: East Midlands Gas Board. Tennis courts and playing fields: The En-Tout-Cas Co. Sliding and folding doors: Esavian Ltd. Ceiling fixers: Hall & Co. Tanking: John Hadfield & Sons. Cork tiles, wood block floors, wood strip floors: Hollis Bros. Stage and Hall curtains: Gerald Holtom (Printed Textiles). Thermoplastic tiles: Letco Floors & Tiles, Ltd. Roofing felt: Northern Asphalt & Roofing Works Co. Steel roof decking: Permanite, Ltd. Fibrous plaster: Plaster Decoration Co. Exterior decoration: Quickset Water Sealers Ltd. Gymnasium equipment: Spencer, Heath & George, Ltd. Sanitary fittings: Adamsez, Ltd. Fireplace Grate and Back: Bratt Colbran, Ltd. Ceiling panels: The Cape Asbestos Co. Adjustable louvres: H. W. Cooper & Co. Acid neutralizing chamber: Doulton & Co. Sanitary fittings: W. Emery & Co. Rayburn cookers: B. Finch & Co. Kit Lockers: James Gibbons Ltd. Cubicle track: Hunter & Hyland Ltd. Toitet incinerator: The Hygienette Mfg. Co. Firepuace tiles: H. & R. Johnson, Ltd. Wood wool: The Marley Tile Co. Ironmongery: Mountford Bros.; Neville Watts & Co. Sanitary fittings: John Norton & Son (Sheffield). Window cleaning cradle fixings: Palmer's Travelling Crane & Scaffold, Ltd. Shower curtains: Proctors, Ltd. Mats: Public

Health Department, Welfare of the Blind Dept. Wallpaper: Sandersons, Ltd. Ironmongery: Smith Bros. & Widdowson, Ltd. Facing bricks: G. Tucker & Sons. Hose reels: A. W. V. Turner & Co. W.C., shower partitioning and Permaply panelling: Venesta Ltd. Mixing values: Walker Crosweller & Co. Sanitary fittings: Woodhouse & Co.

Secondary School at Hatfield for Herts C.C. Architects: Architects' Co-Partnership in collaboration with the County Architect. General contractors: Welwyn Builders Ltd. Sub-contractors: Bitumetal roofing: William Briggs & Sons. Fencing: Chain Link Fencing Ltd. Chemical resisting traps and wastes: Chemical Pipe & Vessel Co. Curtains and tracks: Gerald Holtom (Printed Textiles). Wood and thermoplastic flooring: Hollis Bros. Ltd. Window blinds: London Blinds. Sump pump and ash hoist: Wickham Engineering Co. Fibrous plaster: Plaster Decoration Co. Electrical installation: A. Tindall & Sons. Windows: Quicktho (1928) Ltd. Skylight: Crittall Mfg. Co. Gymnasium equipment: Spencer, Heath & George Ltd. Tarmacadam paving: Home Counties Tarmacadam Contracting Co. Floor tiling: Haradine Rouse & Co. Plastering and paving: R. F. Jones. Plumbing: Lakers (Sanitation and Heating Ltd.). Asphalte tanking: Excel Asphalt Co. Painting and decoration: Ernie Bayliss Ltd. Glazing: Mustill Wallis & Co. Earth moving: Joe Beaton, Ltd. Aluminium alloy r.w. fittings: Alumase Ltd. Aluminium alloy r.w. pipe: T.I. Aluminium, Ltd. B.A. partition blocks and manhole covers and frames and C.I. floor gratings: Broad & Co. Ironmongery: Nettleford & Moser Ltd. and A. J. Binns Ltd. 'Triped' door mats: James Benson, Ltd. School furniture: Gee, Walker & Slater, Ltd. Wall panel units: Boulton & Paul, Ltd. Timber components to roof framing: Samuel Elliott & Sons (Reading). Roof lights: Greenwoods & Airvac Ventilating Co. Precast flower pots: Walter Lawrence & Son. Cloakroom fittings:

Mountford Bros. Ltd. Facing bricks (external): R. Passmore & Co. Facing bricks (internal): J. H. Sankey, Ltd. Sanitary fittings: Stitsons Sanitary Fittings, Ltd. W.C. Partitions: Venesta, Ltd. Reinforcement: Twisteel Reinforcement Ltd. Preformed copper wastes: Econa Modern Products, Ltd. Cerebros floor tiles: William Lockhart, Ltd. Paint: Docker Bros. Wood finishes: Nu-finishes, Ltd. Sliding door gear: P. C. Henderson, Ltd.; British Trolley Track Co. Astos and Ledtrinda DP course: J. Byford. Expamet angle bead: The Expanded Metal Co. Gyproc Acoustic ceiling boards, bitumen bonded fibreglass and Celotex insulation board: Fine-Fare, Ltd. Internal plywood wall linings: M. L. Meyer, Ltd. Sundeala 'A' wall board (pin-ups): Sundeala Board Co. Drain goods: Travis & Arnold, Ltd.

Chaddesden Secondary Modern School, Derby, for Derby C.C. Architect: Architects' Co-Partnership, in association with the County Architect. General contractors: Ford & Weston, Ltd. Subcontractors: Structure and cladding, steel frame steel staircases, metal balustrades, p.c.c. floor units, roof lights, external p.c.c. cladding, glazing, steel casement windows, internal door frames and external doors: Hills (West Bromwich) Ltd. Internal partition panels: British Plasterboard (Holdings) Ltd. Inner lining panels to external walls: Laconite Ltd. Electrical installations: Hartley Installations Ltd. Heating, hot water installations and cold water: Weatherfoil Heating Systems. Suspended ceilings: Gypsum asbestos sheeting: Cape Asbestos Ltd. Perforated acoustic fibreboard: Anderson Construction Co. Sanitary fittings: Adamsez, Ltd. Copper waste fittings: Thos. Crump & Co. Ironmongery: Parker, Winder & Achurch Ltd. Floor and stair finishes: Laminated wood strip: Masters & Andren, Ltd. Wood block: Hollis Bros. Ltd. Thermoplastic tile: Marley Tile Co. Linoleum: Korkoid Decorative Floors.

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# In good taste

THIS CANTEEN for the staff of Messrs. Venesta Ltd. was furnished and fitted out by Heal's Contracts Ltd., who collaborated with the architects, Messrs. Kersey, Gale and Spooner, on a conversion scheme at Vintry House, E.C.4. The work also included the design, decoration, and furnishing of a directors' dining room. If you would like to see more of Heal's recent work for offices, hotels and ships, our illustrated booklet Furniture for Special Needs is available to architects.



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This is a reprint of a recently published advertisement from Venezuela announcing the installation of Roneo partitioning in the Creole Petroleum Corporation Offices. Roneo not only design and make partitioning—they survey the area to be partitioned, advise on layout, prepare detailed drawings and specifications, co-operate with other trades and professions and install in any part of the world.

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PERI RCENAS A RIO

TBW/81

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Ceramic tiles (entrance): Langley (London) Ltd. Wall tiling: Carter & Co. Internal doors: Leaderflush, Ltd. Brick facings: Geo. Tucker & Son. Chimney: Chimneys, Ltd. Impregnated plywood cladding sheets, and lavatory partitions: Venesta, Ltd. Asphalt tanking: Highways Construction Co. Roofing: 8-ply bituminous felt and felt tanking and d.p.c.s: Northern Asphalt, Ltd. Wood wool slabs: Thermacoust, Ltd. Aluminium roof decking and 3-ply bituminous felt: William Briggs & Sons. Fibrous plaster: Plaster Decoration Co. Window cleaning cradles and bolts: Palmers Travelling Cradle & Scaffold Co. Venetian and blackout blinds: J. Avery & Co. Book lockers: Gee, Walker & Slater, Ltd. Curtains and tracks: Gerald Holtom. Furniture: Geo. M. Hammer & Co., Hopewells, Ltd. and Heal & Son. Lighting fittings: Hartley Installations, Ltd., Merchant Adventurers, Ltd., Hale, Wood & Ackroyd, Ltd. and Hume Atkins, Ltd. Assembly Hall curtain tracks and gear: Hall Stage Equipment Ltd. Gymnasium rooflights and kitchen extract fan: Greenwoods & Airvac Ventilating Co. Entrance gates, railings and chain link fencing: Bayliss Jones & Bayliss, Ltd. Sliding door gear: E. Hill Aldam & Co. Incinerator: The Hygienette Mfg. Co. Paint: Docker Bros. Ash hoist: Wickham Engineering Co. Windows for fume cupboards: Quicktho' (1928) Ltd. Clocks: Gent & Co. Shelving: designed by Clive Latimer, M.S.I.A.

Factory at Stevenage New Town. New Town Corporation Architect: D. P. Reay. General contractors: John Laing & Son. Sub-contractors: Foundations: The Franki Compressed Pile Co. Reinforced concrete: Shockcrete Products, Ltd. Bricks: Cement Marketing Co. and London Brick Co. Structural steel, fencing gates: Boulton & Paul, Ltd. Special roofings: Brock Roofing, Ltd., Macartney, Ltd. and Universal Asbestos Co. Partitions: Broad & Co. Patent glazing and glass: Faulkner Green, Ltd. Patent flooring: Semtex, Ltd. Plastering: Pollock Bros. Ltd. Central heating: James Combe, Ltd. Electric wiring: Holliday, Hall

& Stinson, Ltd. Door furniture: Alfred G. Roberts, Ltd. Folding doors: Educational Supply Assoc. Ltd. Plumbing: Mathew Hall & Co. Sanitary fittings: Ashley Brandon (Kensington) Ltd. Doors: Hills & Son. Metal: Clark Hunt, Ltd. Tiling: Carter & Co. Signs: The Lettering Centre. Paint: Leyland Paint & Varnish, Ltd.

Church at Sidley, Sussex. Architect: Alex F. Watson. General contractors: E. Godwin & Sons. Sub-contractors: Dampcourse: Ruberoid Co. Bricks: The Sussex & Dorking Brick Co. Insulation quilt: Huntley & Sparks, Ltd. Tiles: Marley Tile Co. Woodstrip: Horseley Smith & Co. (Hayes). Patent flooring: Highway Construction, Ltd. Waterproofing materials: The Cement Marketing Co. and Chemical Building Products. Central heating: Comyn Ching & Co. (London). Gas fixtures: Ascot Gas Water Heaters, Ltd. Electric wiring: Higgins & Cattle, Ltd. Electric light fixtures: The Merchant Adventurers, Ltd., Courtenay Pope (Electrical) Ltd. and Falk Stadelmann & Co. Door furniture: A. J. Binns, Ltd. Casements and window furniture: Wainwright & Waring, Ltd. Plaster: Gyproc Products, Ltd. Connectors of roof timbers: Kerby Engineering Co. Paints: Lewis Berger (Great Britain) Ltd. Pews: E. J. Bowles & Sons.

House at Totteridge, Herts. Architects: Sydney Greenwood & Howard N. Michell. General contractor: John Laing & Son. Sub-contractors: Bricks (golden brown facings): Proctor & Lavender, Ltd. Bricks (Tuscan facings): London Brick Co. Stone, marble: Anselm Odling & Son. Special roofings (cedar shingles): W. M. Walker & Co. Roofing felt: Permanite, Ltd. Glass: Pilkington Bros. and Newman & Watson, Ltd. Patent flooring (mosaic) and tiling: S. A. Forbes & Sons. Central heating, plumbing: G. N. Haden, Ltd. Fireplace: Allied Ironfounders, Ltd. Gas fixtures: Eastern

Gas Board. Electric wiring: Holliday Hall & Stinson. Electric light fixtures: Merchant Adventurers of London, Ltd., Troughton & Young, Ltd. and Falk Studelmann & Co. Electric heating: Bratt Colbran, Ltd. External tilings: Carter & Co. (London) Ltd. Sanitary fittings: Shanks & Co. Door furniture: A. G. Roberts, Ltd., A. J. Binns, Ltd. and Childs Constantine & Co. Casements, sunblinds, window furniture, greenhouse (metal windows): Crittall Manufacturing Co. Carda windows: Holeon, Ltd. Plaster: Pollock Bros. Textiles, built-in fittings, furniture: Heal & Son, Ltd. Wallpapers: John Line & Sons. Shrubs, trees, landscaping: F. C. Courten & Co Water softening plant: Permutit. Signs: Franco Signs, Ltd. Wall panel: Thermalite Ltd.

Bar at Grosvenor House, W.1. Designer: R. D. Russell. General contractors: Holland & Hannen & Cubitts, Ltd. Sub-contractors: Stone paving, skirting, marble footrest: J. Whitehead & Sons. Lighting: Anthony Juer Lighting, Ltd. Heating and ventilating: Ashwell & Nesbit, Ltd. Carpet: I. & C. Steele & Co. Upholstery and curtains: hide: Connolly Bros. (Curriers). fabric: W. A. Percheron and John W. Caller, Ltd. Corkile flooring: Armstrong Cork Co. Sliding glass panels: P. G. Allday & Co. Suspended steel framing for ceil panels: W. H. Colt Ltd. Plant arrangements: Mary Braendle. Alterations to handrailing in lounge: C. A. & A. W. H. Haward, Ltd. Floor springs and hinges: night latches: A. J. Binns, Ltd. Decorated looking glass: Pugh Bros. Ltd. Refrigerated cupboards: Gaskell & Chambers, Ltd. Occasional tables-bar stools: Ernest Joyce. Chairs: Russell Furnishings, Ltd. Decanters: designed by R. Y. Goodden and made by Webb & Sons.

Bar at the Midland Hotel, Manchester. Designer: John Carter. Chairs and tables: Finmar, Ltd. Upholstered chairs: Horace Holme. Contractors: Harris & Sheldon, Ltd.

